Spring 2013

The impact of note-taking in counseling

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University of Iowa

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THE IMPACT OF NOTE-TAKING IN COUNSELING

by

Chu-Ling Lo

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Rehabilitation and Counselor Education
in the Graduate College of
The University of Iowa

May 2013

Thesis Supervisor:  Associate Professor John S. Wadsworth
ABSTRACT

The purpose of this study was to discover the impact of counselors’ note-taking on their interview recall, clinical judgment, and general judgment of clients. The notes taken by the subjects were analyzed to discover the role that notes play in the counseling process. Thirteen master’s students in the Rehabilitation Counseling program were recruited as participants. The results indicate that counselors’ note-taking does not enhance their ability to recall but reviewing complete notes does. In addition, counselors’ capability of clinical judgment stays the same whether they take notes and review, take notes but do not review, do not take notes, or review complete notes. There is no evidence showing that note-taking helps or impedes counselors from making accurate clinical judgment. The qualitative analysis of the notes indicates that subjects do not take notes with observable organization and enough content. Thus, the result suggests that counselors do not spend much cognitive effort on taking notes and do not utilize note-taking as a strategy to manage information. Moreover, when subjects refrain from taking notes, they can perform on recall and clinical judgment as well as when they take notes in the session and when they review complete notes. Thus, it is suggested that novice counselors would be better off not taking notes if they cannot take complete notes. However, there is also some evidence suggesting that counselors may perceive the client differently when they do not take notes in the session. Suggestions for counselor education and further research are provided.

Abstract Approved: ________________________________

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Title and Department

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Date
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has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Rehabilitation and Counselor Education at the May 2013 graduation.

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ACKNOWLEDGMENTS

The realization of this project was made possible by the support of many mentors in my professional development. I want to recognize the commitment of Dr. John Wadsworth. His guidance made the completion of this project possible. In addition, I would like to express my deep appreciation to my dissertation committee: Dr. Maki, Dr. Ansley, Dr. Wood, and Dr. Estrada-Hernandez. Their advice was valuable for me to complete this project. Furthermore, I would like to thank my mentor Dr. Tarvydas. She has been an excellent role model to me while I pursued my doctoral studies.
ABSTRACT

The purpose of this study was to discover the impact of counselors’ note-taking on their interview recall, clinical judgment, and general judgment of clients. The notes taken by the subjects were analyzed to discover the role that notes play in the counseling process. Thirteen master’s students in the Rehabilitation Counseling program were recruited as participants. The results indicate that counselors’ note-taking does not enhance their ability to recall but reviewing complete notes does. In addition, counselors’ capability of clinical judgment is not different whether they take notes and review, take notes but do not review, do not take notes, or review complete notes. There is no evidence showing that note-taking helps or impedes counselors from making accurate clinical judgment. The qualitative analysis of the notes indicates that subjects do not take notes with observable organization and enough content. Thus, the result suggests that counselors do not spend much cognitive effort on taking notes and do not utilize note-taking as a strategy to manage information. Moreover, when subjects refrain from taking notes, they can perform on recall and clinical judgment as well as when they take notes in the session and when they review complete notes. Thus, it is suggested that novice counselors would be better off not taking notes if they cannot take complete notes. However, there is also some evidence suggesting that counselors may perceive the client differently when they do not take notes in the session. The results suggest that counselor educators can develop strategies for counselors-in-training to create complete notes. Future research can recruit experienced counselors as participants for comparison.
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CHAPTER I
INTRODUCTION

Background of the Study

The practice of note-taking is commonly known as the recording of information from a transient source. Occurring on a daily level, people take notes for a variety of things, including grocery shopping lists, telephone numbers or driving directions. In the academic setting, students take notes during lectures to record information. In professional situations, jury members are permitted to take their notes and use them during deliberation (Horowitz & ForsterLee, 2001). Physicians are expected to write clear and efficient notes about their encounters with patients (Friedman, Sainte, & Fallar, 2010). Job interviewers may take notes during interviews with applicants. Lawyers often take notes in tracking previous conversations with a client and for billing purposes. Many helping professionals, such as psychiatrists, psychiatric nurses, social workers, psychologists, counselors, and other human service workers, also take notes in their practice. Note-taking may also be used as a memory strategy. For example, note-taking has been used as a memory aid for people with learning disabilities or older adults (e.g. Eskritt & McLeod, 2008; Boyle, 2007; Song, 2011).

Note-taking in non-academic settings has a diverse impact. For example, in vocational settings, note-taking can benefit employers by creating an external document that stores the information employers need in order to make hiring decisions and thus improves recall accuracy. However, in vocational settings, note-taking does not improve the accuracy of judgments about hiring an ideal employee (Middendorf & Macan, 2002). This result is consistent with Schuh’s (1978) study conducted in other employment interview scenarios, which found no significant influence of note-taking on the overall suitability evaluation, except for the advantage in the interviewers’ listening accuracy. On the other hand, other researchers (e.g. Biesanz et al., 1999; Burnett et al., 1998, as cited in Hartley, 2002) indicate that note-taking does indeed reduce bias and enhances the rating
validity in an employment interview. Thus, note-taking has mixed results and impacts in employment settings. Moreover, in legal settings, note-taking has no significant effect on recall in ‘real-life’ jury situations. However, in mock juries, note-taking juries appeared better able to recognize probative evidence and reject false lures than non-note-taking juries (Hartley, 2002; Horowitz & ForsterLee, 2001). Although some benefits of note-taking have been identified in these non-academic settings, these results have been fairly inconsistent. Overall, it appears that note-taking improves recall. However, evidence suggests that the effects of note-taking on judgments are unclear.

Among all the note-taking situations, academic note-taking is more often discussed because numerous researchers study the relationship between note-taking and students’ academic achievement, especially on the post-secondary level. For example, several researchers have examined college students’ perceptions about note-taking (e.g. Reimer, Brimhall, Cao, & O’Reilly, 2008; Meter, Yokoi, & Pressley, 1994) and the role notes play in learning (e.g. Carter & Van Matre, 1975; Knight & McKelvie, 1986). These studies indicate that note-taking improves students’ performance. For example, Bohay, Blakely, Tamplin, and Radvansky (2011) found that note-taking improved a person’s referential understanding of the described events. Also, Di Vesta and Gray (1972) discovered that the number of ideas recalled was favorably influenced by note-taking.

As educators and students are aware, taking notes can provide note-takers with material to review later. Thus, note-taking is often perceived as an activity related to accuracy and content recall by ensuring that there is an external storage of information (Di Vesta & Gray, 1972). Moreover, note-taking increases engagement with the information and thus assists note-takers in processing the materials; in fact, the process of recording notes may facilitate content recall even without subsequent review of the notes (Kiewra, 1989). Thus, note-taking is beneficial for students in recall efficiency (Carter & Van Matre, 1975) and information synthesis (Peper & Mayer, 1978).
Studies of Note-taking in Counseling

There is relatively little discussion regarding the function and impact of note-taking in counseling. Although many counselors take notes during sessions, counselors’ note-taking behaviors and skills have rarely been examined. Counselors take notes to refresh their memory, to remind themselves to carry out an agreed-upon plan, to show what they have done or left undone, and to discuss the content of the session with professional colleagues (Benjamin, 1981). In addition, note-taking during counseling sessions is often helpful to meet clinical and legal requirements to document case activity (Gutheil & Hilliard, 2001). Clinically, notes provide chronicles of clients’ treatment, which help counselors to look back and assist other counselors or clinicians in continuing the treatment in the absence of the original therapist. Legally, third-party payers require case documentation and clients have the right to review their treatment record (Gutheil & Hilliard, 2001; Prieto & Scheel, 2002). What is more, many counselors must take case notes to meet federal and institutional requirements and to prepare proactively for the unlikely event of a malpractice charge (APA, 2007; Gutheil & Hilliard, 2001). However, aside from the purposes of documentation, there is a paucity of discussion regarding the function and impact of note-taking in the counseling process. Additional studies are needed to explore the relationship between note-taking in counseling sessions and the effect of recall on documentation, as well as counselors’ competency skills.

In the few studies regarding note-taking in counseling, researchers primarily focus on the impact counselors’ note-taking has on clients. For example, Miller (1992) examined the effects note-taking had on a counselor’s social influence perceived during a career counseling session and found that there were no significant differences in the ratings of the counselor’s perceived social influence, in terms of expertise, attractiveness, and trustworthiness, between note-taking and non-note-taking vignettes. However, it is interesting to note that observers expressed a greater willingness to use the services of the counselor who refrained from note-taking. Miller (1992) interpreted the increased
willingness of observers to use the services of the counselor who refrained from note-taking to the attentive non-verbal behaviors exhibited in the counselors in the non-note-taking condition.

Furthermore, note-taking may be deleterious to the therapeutic alliance. Hickling, Hickling, Sison, and Radetsky’s (1984) study of social work graduate students indicated that a counselor who did not engage in note-taking was rated as more effective in comparison to the counselor who took notes during a mock client counseling session. The observers rated therapist effectiveness, client reaction to the session, and total therapeutic impact significantly higher in counseling sessions conducted without note-taking (Hickling, Hickling, Sison, & Radetsky, 1984). The authors concluded that note-taking was a general detrimental factor to the counseling process and counselor effectiveness.

Aside from the impact of counselors’ note-taking on clients, no research has highlighted the effects of note-taking on counselors. According to Hartley’s (2002) extensive literature review comparing the impact of note-taking in five non-academic settings, counseling is the only situation in which note-taking was found to have detrimental effects. In the other four situations, namely, legal situations, job interviewing, as a memory aid for older people and for brain-injured persons, note-taking had positive or tentatively positive effects. Yet the methodologies across studies included in Hartley’s analysis of literature were not similar. Studies of counselor behavior rely on ratings of the counselors’ effectiveness by external observers; in other situations, the effects of note-taking were evaluated by the usefulness of the notes to the note-takers. Therefore, Hartley (2002) suggested that how the counselor may be helped or hindered by taking notes was worth examination. He further advised that a qualitative study of counselor note-taking would be of value. That way, a study of the impact of note-taking on counseling would not be limited to clients’ perception.

Counselors’ note-taking can be a complex process. According to Freud’s (1912) traditional psychoanalytic view, making transcripts during the therapy session is not
helpful to the analytic task because therapists would focus on remembering details, and the expectations of what will be found and what one should listen (as cited in Levine, 2007). Thus, the attempt to remember or record destroys analysts’ capability and interrupts the exercise of psychoanalysis.

From the perspective of cognitive psychology, the act of note-taking itself may “create a dual task situation that redirects cognitive resources that would otherwise be devoted to other memory and comprehension processes and sends them to the actions of scribbling something down” (Bohay, Blakely, Tamplin, & Radvansky, 2011, p. 64). Counseling is a process that requires counselors’ full attention. However, note-taking is an additional “complex activity that requires comprehension and selection of information and written production processes” (Piolat, Olive, & Kellogg, 2005, p.291). Piolat and colleagues (2005) found that there was a great demand on one’s working memory to select key points and record key points, as well as simultaneously comprehending new information. Therefore, it is very difficult to write notes and engage in intense listening at the same time for counselors (Miller, 1992). Note-taking may divide part of counselors’ cognitive efforts that are supposed to be spent on clients.

In addition, counselors often have to direct their visual attention to their clients, which may not be compatible with their note-taking behavior (Kobayashi, 2005). When counselors take notes, they might miss some important non-verbal cues from the clients. In contrast, when students miss some information in class, they can borrow others’ notes or read the textbook to mend their memory and understanding. However, if counselors accidentally miss some information in the session because of taking notes, they will not have a chance to retrieve the information. Accordingly, note-taking may compromise counselors’ performance.

In contrast, Levine (2007) argues that note-taking may be an aid when note-taking is not used for the purpose of remembering, but rather as a centering and self-regulating device employed to help maintain one’s analytic composure and competence in the face
of certain stressful or difficult situations. He proposes that the act of note-taking during the session has supported his ability to maintain his analytic capacity to think coherently and analytically (Levine, 2007). Levine’s argument is convincing because people can engage more actively with the information by doing more than just listening (Bohay, Blakely, Tamplin, & Radvansky, 2011). Note-taking increases the degree to which a person attends to the information. Upton and Asch (1999) also argue that note-taking is a means of facilitating counselor reflection, which leads to counselor development and better practice. Taking notes encourages counselors to think more deeply about a topic.

In sum, there are some discussions about counselors’ note-taking, but they reach no firm conclusions regarding this issue. On the one hand, note-taking provides a transcription for counselors to review and enhances counselors’ attention to information. On the other hand, counselors may engage in note-taking and miss other cues that provided by the clients. Whether the benefits of note-taking to counselors outweigh the disadvantages of cognitive efforts is not clear. Therefore, applying empirical experiments to discover the impact of counselors’ note-taking would be worthwhile.

**The Uniqueness of Note-taking in Counseling**

The complexity of counselors’ note-taking could be a result of the uniqueness of the counseling relationship. Note-taking in counseling is a much more complex activity that is very different than note-taking in academia or other settings. For instance, in academia, students pay attention to an organized, systematic, and pedagogically-based presentation of information, which is often structured to meet the learners’ needs. Instructors usually use handouts, overhead, or Powerpoint slides to facilitate students’ understanding, which reduces the cognitive burden of note-taking (Stefanou, Hoffman, & Vielee, 2008). With the assistance of the instructors, students can take notes while interacting with instructors and thus engage in generative learning (Stefanou, Hoffman, & Vielee, 2008).
In contrast, note-taking in the counseling setting requires attending to an intensive interactive process that may be fragmented, unfocused, and, most certainly, is not structured to meet the counselors’ needs. This unorganized presentation of information could create additional loads on counselors’ cognitive efforts. Moreover, counseling involves multiple communication methods, including verbal and non-verbal expressions. Note-taking in academia often does not require attention to behavioral, emotional, and process levels of communication. In addition, counselors need to use their skills and professional knowledge to help clients to deal with their emotional, vocational, social, or psychological issues. Compared to other professionals, such as job interviewers or attorneys, whose conversations often target listening and finding facts, counselors need to reflect clients’ feelings, clarify their problems, and demonstrate proper empathy toward the clients. All of counselors’ behaviors have to show benefits on clients’ welfare. Therefore, due to the distinct features in the counseling relationship, taking notes and using counseling skills simultaneously are not easy and create more complexity than in other professional relationships.

**Purpose of the Study**

The purpose of this research project is to investigate the effect of note-taking on counselors. A review of the literature from multiple disciplines suggests the lack of studies about the impact of note-taking on counselors. Because counseling has many features different from academic and other non-academic settings, note-taking in counseling may have distinctive effects than in other circumstances. Therefore, this study intends to investigate whether note-taking is constructive for counselors, in terms of content recall and judgment accuracy. The impact of counselors’ note-taking behavior on counselors themselves will be examined, and results will be compared with studies on note-taking in academia.
This study will explore the two functions of note-taking in counseling settings: external storage and encoding. External storage is useful because note-takers can store the information in notes for future reference. The function of encoding means that people cognitively organize materials in the process of note-taking, which is beneficial to synthesize information. People who only review notes utilize the function of external storage, while those who take notes without reviewing use the function of encoding. In order to employ the joint effects of the two functions, people would need to take notes and review them. Similar situations happen in the practice of counseling as well. For example, counselors can take notes during the session and review them before they document the case or make any judgments. Sometimes, counselors may take notes but don’t have time to review them. Other times, the supervisor may only rely on counselors’ notes to make judgments without directly participating in the session. Therefore, two major functions of note-taking will be examined separately and jointly to identify their individual and combined effects.

This study will also examine the impact of note-taking on counselors’ interview recall and judgments about the client. Judgment, in addition to recall, is selected for study based on their relevancy to counseling practice. Recall accuracy is relevant because high quality of case documentation relies on the ability to recall. If counselors have accurate recall, their documentation will more truthfully reflect their client’s situation. Also, the evaluation of judgment can reveal the fact whether note-taking changes counselors’ cognitive attention and process. The accuracy of clinical judgment is an important indicator of counselors’ competency as well.

Last, this study aims at qualitatively analyzing counselors’ notes. The strategies of notes can be classified as verbatim notes, key points or linear notes, and matrix notes (Kiewra et al., 1991). Other ways to evaluate notes are three levels of information representation, namely the surface form, textbase, and situation model levels (van Dijk &
In sum, the impact of note-taking in counseling may be explained by a hypothetical model (Figure 1), which includes counselors’ recall of information, counselors’ clinical judgments, counselors’ demonstration of the counseling skills, and clients’ perception of counselors’ competency. All these aspects could interact with each other and have an influence on part of the therapeutic alliance. This model describes one of the factors that lead to the therapeutic alliance. Yet, because analyzing the counseling skills requires hiring many expert raters, this study only aims at exploring the two factors in this model: recall and judgment.

**Figure 1. The Impact of Note-taking in Counseling**

![Diagram](image)

**Scholarly Significance**

Clinically, note-taking may directly impact the quality of care the client receives, the ability of the counselor to create accurate documentation, and the perceived quality of care. Therefore, the importance of learning effective note-taking should not be discounted.
or ascribed lesser value than that of other counselor tasks. Indeed, among 115 job-task items in the major job functions of the counselor, “Abid[ing] by ethical and legal considerations of case communication and recording (e.g., confidentiality)” and “writing case notes” were rated the first and third highest in the rehabilitation counseling practice surveys (Leahy, Chan, & Saunders, 2003). Thus, this project will illustrate the relationship between note-taking during sessions and the quality of case records, which is critical to counseling services. Investigating whether note-taking facilitates or impedes a counselor’s judgments can exhibit the influence note-taking on a counselor’s cognitive process. Results of this study may help counselors become more aware of their own note-taking behavior in counseling sessions.

Educationally, the study results may convince counseling educators that attention should be paid to note-taking during counselor training. The Council on Rehabilitation Education (CORE) accreditation standards require performing appropriate case documentation (C.10.18). The Council for Accreditation of Counseling and Related Educational Programs’ (CACREP) standard for clinical mental health counseling also entails the knowledge of “the principles, models, and documentation formats of biopsychosocial case conceptualization and treatment planning” (C.7) and the skills of “applying current record-keeping standards related to clinical mental health counseling” (D.7). If the relationship between note-taking and counselor performance is established in this study, the result will suggest whether systematic training on note-taking for counselors is necessary.

Ethically, a note-taking process that enhances the accuracy of client records further upholds the ethical principle of fidelity. In the past, ethical obligations regarding note-taking focused on keeping clinical notes confidential (e.g. ACA, 2005; CRCC, 2010). However, results of this study can inform counselors about relying on appropriate
note-taking strategies which could enhance their ethical obligations in creating accurate case notes and maintaining their competency.

Note-taking is an integral part of counseling. Miscommunication in documentation can cause serious consequences, such as malpractice lawsuits. Inaccurate notes could be critical drawbacks in the quality of services provided. Note-taking in counseling sessions deserves further investigation because of its high occurrence and possible influence on counseling services. This study answers the question about the relationship between note-taking and the counselor’s effectiveness and thus will have significant and practical implications for the fields of counseling, counselor education, and other helping professions. This study can expand rehabilitation profession’s outlook on note-taking behavior. Thus, the professional knowledge about note-taking will be extended in a new context. Moreover, the results of the study may an impact on all professions that use note-taking as part of their professional services, such as health care, legal assistance, and social workers.

**Research Questions**

This study intends to explore how counselors’ performance is influenced by the act of note-taking in session. Counselors-in-training are recruited as research participants, and the study is guided by the following research questions:

1) Are there differences in content recall accuracy (number of items correctly recalled) among the four note-taking interventions (i.e. no note-taking, taking notes without reviewing, taking notes and reviewing, only reviewing notes) for counselors-in-training?

2) Are there differences in judgment accuracy (number of clinical impression items identified correctly and general judgment ratings) among the four note-taking interventions (i.e. no note-taking, taking notes without reviewing, taking notes and reviewing, only reviewing notes) for counselors-in-training?
3) Which of the three note-taking strategies (verbatim, linear, matrix) do counselors-in-training spontaneously use to take notes?

**Definition of Terms**

**Note-taking**

Note-taking in this project means written commentary completed with a pen and paper. Although this is a digital age and many people are computer-literate, people frequently still rely on hand-written notes. Electronic notes have the advantages of note-taking speed, readability, easier information editing, and benefits of storage and backup capabilities (Reimer, Brimhall, Cao, & O’Reilly, 2009). However, hand-written notes are still not replaced by computer because of the perceived ability of hand written notes to improve memory, efficiency in drawing pictures and symbols, and flexibility in structure, formatting and organization (Reimer et al., 2009). Interestingly, typed notes and written notes were found to have no significant different influence on performance (Bohay, Blakely, Tampline, & Radvansky, 2011). In reality, audio and video recording in the counseling session would involve ethical issues and require permission from clients. Counselors cannot solely rely on technology for case record keeping purposes. Since notes taken by hand are currently the more frequent method of transcription, note-taking in this study is defined as writing notes with a pen and paper during counseling sessions.

**Recall**

This study intends to measure the accuracy of participants’ recall about the interview in each note-taking situation. Recall is “the act or process of retrieving information from memory spontaneously….It involves reproduction of the remembered information” (Colman, 2009, Section R). Recall is also related to the act or process of retrieving information in memory and bringing it into consciousness (Colman, 2009). Participants in this study need to recapture the client’s information from their memory after each intervention by writing down the facts they learn about the client.
Clinical Judgment

Counselors’ clinical judgment refers to how counselors respond to client presentations based on their professional training. Counselors provide clinical judgment by making important decisions about the client’s issue. They formulate an assessment which involves stability of cause, severity and duration of the problem, treatment urgency, and best predicted treatment decisions (Murdock & Fremont, 2000).

General Judgment

General judgment in this study refers to the personality impressions formed by the study participants when they interact with the analogue client. Impression formation is “the rapid creation of a unified perception or understanding of the character or personality of another person on the basis of a large number of diverse characteristics” (Colman, 2009, section I). According to Park and Judd (1989), people spontaneously form personality impressions in most types of interpersonal interactions. Therefore, subjects in this study are also expected to develop their own judgments about the client’s personality without using any professional knowledge. They will draw inferences about the client’s underlying personality characteristics based on the observed behavior (Park & Judd, 1989).

Counseling

The delegates of the American Counseling Association (ACA) agreed on a unified definition of counseling as “a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals” (ACA, 2010). In addition, according to Corey (2005), “counseling is a process by which clients are invited to look honestly at their behavior and lifestyle and make certain decisions about how they want to modify the quality of their life” (p.33). Counseling is also a “more intensive process concerned with assisting normal people to achieve their goals or function more effectively” (Ivey, Ivey, & Simek-Downing, 1987, p.18). Counseling occurs when a professionally trained counselor assists a client with
life, social, career or emotional concerns (Nystul, 2009). Through verbal and non-verbal communication, counselors use a variety of strategies and skills to assist the client to bring about beneficial life adjustment, such as behavioral change, better coping skills, setting meaningful goals, or maintaining satisfying interpersonal relationships.

**Counselors-in-Training**

The author recognizes the differences between qualified counselors and counseling trainees who will be the subjects of the study method. Qualified counselors represent a variety of specialties within counseling and have a variety of specialized skills. Many may have extensive experience with selected client characteristics or therapeutic environments. Qualified counselors employ clinical pathways and care maps to selectively attend to consumers and make diagnostic judgments. In brief, practicing counselors represent a diverse profession that likely uses a variety of clinical methods to recall material and make judgments independent of the content of a client’s story.

On the other hand, counseling trainees are those who are learning to be counselors in a Master’s level accredited program. These individuals have less clinical ability than practicing certified counselors. They have much less “on-the-job” training in recall and judgment. However, this is not to imply that counselors-in-training are devoid of recall and judgment ability. In order to be admitted to a counseling graduate program, trainees must demonstrate success at undergraduate education and successfully demonstrate skills on standardized admissions tests such as the Graduate Record Exam. Trainees represent a selected group of top performers in these activities that require effective note-taking and cognitive skills. Trainees are selected for study because the variable confound of experience among practicing counselors is neither possible to control nor accurately measure. In addition, naïve counselors’ performances are more likely to be influenced and changed by an intervention because their clinical skills are not fully cultivated. Therefore, counselors-in-training, instead of certified counselors, are recruited as participants in this study.
Summary

Note-taking has been studied in academia and in many other non-academic settings. Studies have shown that note-taking is a complex process that involves more than merely jotting down words. The impact of note-taking has been examined for different note-takers, in various settings and for separate outcomes. Results of their studies are mixed. However, the impact of note-taking on counselors is absent in the note-taking studies. Counselors have to demonstrate various job duties in their practice. Incorporation of note-taking in the counseling process could intersect with other counselors’ duties and affect counselors’ performance.

Therefore, this study aims to examine the influence of note-taking on counselors’ recall of information and their judgments. Counselors’ notes taken in the session provide important materials for counselors to review later. As a result, counselors’ note-taking may have an impact on their recall of clients’ information, which serves an important function for future billing and reducing liability (Gutheil & Hilliard, 2001). Additionally, note-taking may affect a counselor’s cognitive process and thus is related to a counselor’s capability of making precise judgments. Further understanding the relationship between note-taking and a counselor’s performance will be of great value.

Currently, there are inconsistent results about the impact note-taking has in different settings. Because of the complexity of human interaction occurring in counseling, there is an unresolved discussion regarding the benefits of note-taking. Some argue that note-taking can sustain a counselor’s cognitive process and ability to store information, while others propose that note-taking could distract counselors’ attention. As a result of the distinct features of note-taking in counseling, the impact counselors’ note-taking has should be examined separately from note-taking in other settings. Whether note-taking during counseling sessions is beneficial requires empirical evidence.

Quality counseling services are dependent on a counselor’s capability of communication with multiple stakeholders – the consumer, supervisors, third party
payers, and even themselves (APA, 2007; Gutheil & Hilliard, 2001). Taking case notes during counseling sessions could impact the effectiveness of communication. If the impact of counselors’ note-taking is revealed in this study, taking notes or not will not rely on counselors’ preference anymore. Note-taking will be a behavior that counselors should think about when they provide services.

In Chapter II, there are more discussions regarding note-taking and the factors involved in the note-taking process.
CHAPTER II
LITERATURE REVIEW

Overview

The purpose of this chapter is to review the note-taking process, mainly from the studies in educational psychology. Through a comprehensive review of note-taking studies, several implications are generated for the study design in this study. Although note-taking is a common activity, the cognitive process involved is quite complicated. Therefore, this chapter first explores what cognitive skills are required in note-taking. Second, the benefit of note-taking will be examined in many situations with various study designs. For example, researchers are interested in discovering in what condition and for whom note-taking has the greatest benefits. However, others have some doubts and concerns about the benefit of note-taking. Thus, this chapter will investigate the arguments from each side. Third, this chapter explains the two functions of note-taking, including the influence they have on the process, methods of measurement, and the debate about which function is more beneficial. Fourth, this study will discuss numerous factors that could potentially affect note-taking and the performance of the note-takers. The factors explored will be considered and controlled in the study design. The fifth consideration would be outcome measure. The choice of outcome may affect the investigation of note-taking. Therefore, the appropriate methodology of studying note-taking will be discussed in this chapter. Sixth, given that the content of notes may reflect the cognitive process of note-taking, this chapter also will review different formats of note-taking and their influence on outcome. The results would provide implications for qualitative analysis of the subjects’ notes. Last, since other factors regarding counseling practices are vital, further considerations about outcome measure of counseling practice will be addressed at the end of this chapter.
The Cognitive Process of Note-taking

Note-taking can consume substantial cognitive resources. Note-takers must comprehend information, select the information to record and format to use, store the information in long term memory, and write the information down before it is forgotten. In the meantime, note-takers need to continue listening for new information. Since writing speed is considerably slower than speech production, note-taking often happens under severe time pressure (Piolate, Olive, & Kellogg, 2005).

The cognitive skills expected to constitute expertise in lecture note-taking include: transcription fluency, working memory, and the higher level cognitive processes needed to identify important information (Peverly et al., 2007). Additionally, transcription speed can affect the capacity of Verbal Working Memory (VWM). If the note-taker writes faster, he/she may have more room in working memory to process and identify important information while continuing to listen to the lecture. Peverly et al. (2007) found that transcription fluency was the only predictor of quality notes, while the ability to identify the main idea was not. Verbal Working Memory has the same structure as transcription fluency and has a similar effect in predicting quality of notes.

Verbal Working Memory (VWM) is of equal importance as transcription fluency is in note-taking, and individuals must have the VWM capacity to process information adequately (Peverly et al., 2007). Before the note-takers write the information down, VWM is required for temporary storage and manipulation of the material (Piolate et al., 2005). Note-takers integrate information they hear in their working memory during the note-taking process. Individual differences in the capacity of working memory are due to the quantity and quality of resources needed to process information in VWM and can lead to differences in skill outcomes (Peverly et al., 2007). For instance, people who have a greater capacity in working memory will be more efficient in processing and monitoring information. Thus, note-taking is beneficial for those subjects with high memory capacity.
and efficiency, but not for subjects with low memory capacity and efficiency (Di Vesta & Gray, 1973).

Moreover, note-taking requires the parallel execution of two processes within a finite capacity working memory system: comprehension and written production (Piolate et al., 2005). In order to perform these parallel functions, basic skills must be executed with an acceptable degree of fluency or automaticity (such as transcription or language fluency), so that most of the available space in working memory can be used for the application of the higher level cognitive skills (such as comprehension) needed to produce successful outcomes (Peverly et al., 2007). If basic skills are not automatized, such as the production of recognizable text, the application of higher level cognitive skills can be attenuated (Peverly et al., 2007).

When the capacity of working memory is reached, note-takers may choose to direct their attention towards comprehension or toward transcription (Piolate et al., 2005). Therefore, if note-takers focus on comprehension, they may write less and have less content to review. In contrast, when note-takers concentrate more on transcription, they may not listen to or understand the information as well as if they had not taken notes. Consequently, in either process, note-takers might lose something regarding the material because attention capacity decreases during the note-taking process (Piolate et al., 2005). However, it is possible that those note-takers who successfully manage and regulate comprehension and written production do not miss critical information. Thus, performance can be determined by how well the demands on working memory are managed (Piolate et al., 2005).

To summarize the cognitive process of note-taking, consider the example of the novice counselor-in-training who is learning the meaning of the term error of measurement in a classroom environment. Initially, the novice attempts to attend to both the class presentation and produce accurate notes; quickly VWM capacity is reached as evidenced by the student asking for material to be repeated and by notes that are
This student is unable to discriminate when to take notes and when to listen and uses VWM inefficiently. In contrast, the counselor-in-training who has basic skills mastered (e.g. they understand shorthand symbols for error of measurement) and has organized cognitive capacity (perhaps because they have read the text prior to class and are familiar with the material from a prior course) is able to quickly use shorthand symbols to represent concepts in notes and attend to important lecture material. This trainee knows when to listen and when to write and can better divide VWM between tasks.

**Benefits of Note-taking**

The benefits of note-taking have been identified as the opportunity to review and to elaborate on the information. Students often report that taking notes helps them be attentive, structure the materials and recall the content (Van Meter, Yokoi, & Pressley, 1994). Notes are self-generated memory cues that remind a person of verbal or textual information that no longer exists. Additionally, reviewing notes can serve as a second chance to study the material, thereby boosting memory performance. Review can also provide another opportunity for deeper processing and elaboration (Bohay, Blakely, Tamplin, & Radvansky, 2011).

The act of note-taking can aid later performance even without later review. The act of note-taking serves as an active engagement with the content that is recorded. Engagement through note-taking has been shown to facilitate learning (Bohay et al., 2011). People who take notes are more likely to elaborate on material. During note-taking, people engage in greater mental organization, leading to improved memory and comprehension (Bohay et al., 2011). Thus, the act of note-taking alone may improve recall and understanding over conditions when no notes are taken.

On the other hand, there is evidence that note-taking may be of limited benefit and, in some cases, compromise performance. A meta-analysis of 57 studies showed that the overall effect of note-taking compared with no note-taking was positive but modest
(Kobayashi, 2005). Although note-taking can be beneficial on some occasions, on other occasions it might interfere with the learning performance. The act of note-taking itself creates a multiple task situation, including memory, comprehension, and writing, that divides the cognitive resources and thus may affect the cognition that should be solely devoted to comprehension or other higher-order cognitive processes. Thus, cognitive processes might be disturbed by the actions of scribbling something down (Peverly et al., 2007)

Further, note-taking that is utilized as a mechanical strategy for copying verbal information may interfere with the attention necessary for integrating knowledge. As most educators have observed, compulsive note-takers have difficulty generating connections while note-taking. For these students, note-taking is used solely for the purposes of external storage for later review. This observation is supported by Stefanou, Hoffman, and Vielee (2008), who found that the amount of directly copied information was a negative predictor on a factual information quiz. The more the students copied directly from what they heard or read, the poorer their performance was on factual recall questions. This suggests that note-takers would not enhance their learning by taking notes if they simply copy the lecture or slides without processing the information. In this case, note-taking may only aid the lower level of processing information because of the increased attention focused at this level (Di Vesta & Gray, 1972).

Whether note-taking is beneficial may depend on the approach of writing notes. For example, when note-takers add more words in their notes, they perform better on questions that ask them to apply knowledge than students who either copy more or omit more words (Stefanou, Hoffman, & Vielee, 2008). The proportion of additional words in the notes from the source material is a significant predictor of quiz scores. The more words students add into their notes, the more they are elaborating on the material and thus actively engaging in generative learning. Then, when learners organize and elaborate on the material while taking notes, note-taking will facilitate performance. Therefore, if
note-takers are to take advantage of note-taking, they need to engender meaning and be aware of how and what to learn in the process (Barnett, Di Veta, & Rogozinski, 1981). After all, learning results from active generation of meaning and the metacognitions about how and what to learn.

In summary, consider the example of counselors-in-training engaged in a didactic course experience in which note-taking is expected. Research suggests that the act of note-taking improves the performance of the students on recall tasks through the creation of memory cues and engagement with the material. Research also suggests that elaborate notes facilitate performance on application tasks. However, note-taking has two faces. While elaborate notes produce positive outcomes, elaborate note-taking may become an exercise in reproducing as much material as possible for the purpose of taking notes rather than for the purpose of engaging with and understanding the material. In this latter case, the act of note-taking may become a barrier to understanding.

**Functions of Note-taking**

**External Storage**

Research has distinguished and confirmed the external storage and encoding functions of note-taking (Kiewra, 1989). Note-taking ensures that there is an external storage of information and thus is useful in improving accuracy and content recall. Typically, researchers test the storage function of note-taking by comparing the performance of subjects who review their notes with those who are forbidden to review them. As expected, the review of notes results in higher achievement on various performance tests than those not permitted to review (Kiewra, DuBois, Christian, & McShane, 1988). Review helps learners to “consolidate noted information, reconstruct previous unrecorded lecture points, stave off the natural process of forgetting, or relearn forgotten information” (Kiewra, 1989, p.151).
Encoding

Encoding, another function of note-taking, is “converting information into a different form of representation, especially the process whereby physical sensory information is transformed into a representation suitable for storage in memory and subsequent retrieval” (Colman, 2009, Section E). Thus, encoding happens when people structure the materials in the process of note-taking. Typically, researchers test the encoding effect of note-taking by comparing learning outcomes of non-note-takers with note-takers when given no opportunity to review their own or provided notes afterward (Kobayashi, 2005). As expected, note-taking is an effective strategy to encode information because “note-taking activities encourage increased attention, more elaborative processing of specific ideas, and/or greater organization of lecture material” (Kiewra, 1989, p. 149).

In addition, the process of recording notes may facilitate recall through improved encoding even without subsequent review of the notes (Kiewra, 1989). Note-taking can improve the deep comprehensive of material by connecting material. Well organized and connected ideas facilitate the ability to recall because the recall of one idea often cues the recall of associated notions (Kiewra et al., 1988).

Discussions of Note-taking Functions

The functions of note-taking have been explained by two theoretical models: repetition and generative processing (Kiewra et al., 1991). The repetition model suggests that the function of notes is to offer the advantages from encoding plus storage. Note-takers have two opportunities to process information and to be exposed to lecture information which results in greater learning. However, people who only review borrowed notes or only take notes but do not review have merely one chance to manage information. Meanwhile, generative process model suggests that the function of notes is to generate connections among new ideas and previously learned material and that these connections aid encoding of material (Kiewra et al., 1991). In the encoding process, note-
takers will paraphrase, select, and summarize whatever information is relevant to their learning goals (Barnett et al., 1981). Note-takers make decisions about what to write down and what to exclude. Thus, taking notes filters out the unnecessary information and emphasizes what is to be learned. The process of deciding and emphasizing what is to be learned is beneficial even if notes are not reviewed (Barnett et al., 1981). Hence, note-taking facilitates learning by repeatedly exposing subjects to lecture content and by the generative processing caused by manipulating relevant information (Piolate et al., 2005).

There is a discussion regarding which of the two—external storage or encoding—is the more important function of note-taking. Some researchers argue that the primary value of note-taking comes not from the recording of ideas, but from the external storage of noted ideas available for review (Kiewra et al., 1988). To benefit from review, learners must have adequate notes to study. Accordingly, not recording notes will almost inevitably result in an inability to recall information since there is no documentation to review (Kiewra et al., 1988). In another study, an external storage group (review notes only) outperformed an encoding group (taking notes only) on a synthesis test even though the external storage group was absent from the lecture (Kiewra et al., 1991). In addition, students who listened to a lecture without taking notes but review provided notes with complete content generally performed better on achievement tests than did those who took and reviewed their own notes (Knight & McKelvie, 1986). The relative effectiveness of the provided notes was due to their breadth and organization when compared with students’ notes. Reviewing provided notes that are complete is more helpful to learners than reviewing incomplete notes they have taken themselves. These results imply that the external storage function of note-taking is more beneficial than encoding.

Even if encoding is hypothesized to be facilitative, it most likely happens during review, rather than when notes are recorded. Simply taking notes does not always have an effect on encoding. Participants probably engage in generative activity while reviewing
notes because the attention resources are not divided (Kiewra et al., 1991). The review of notes is the only time permitted for generative processing to take place. Moreover, encoding is facilitated as a result of studying notes previously taken because the number of irrelevant words is decreased (Carter & Van Matre, 1975). Thus, Carter and Van Matre (1975) concluded that encoding as a function of note-taking was minimal. The function of external storage for review assumed primary importance in note-taking.

Furthermore, the researchers proposed that the encoding process alone did not help note-takers recall or generate relations among the parts of the learning materials. The encoding group (taking notes only) did not outperform the control group (no note-taking) in either the recall or the synthesis test (Kiewra et al., 1991). This result showed that taking notes was no more effective than listening to a lecture without note-taking. Therefore, although note-taking potentially involves encoding and elaborative processes, there is no assurance that this actually occurs (Carter & Van Matre, 1975). In fact, under time pressure, note-taking is more likely to resemble verbatim transcription, than resemble the more beneficial elaborative activities associated with meaningful learning (Carter & Van Matre, 1975). Kiewra et al. (1991) contended that lecture learning was “a very demanding process during which relatively little meaningful encoding actually occurs” (p. 244).

There are some possible reasons for the modest effect of encoding in note-taking. The first explanation is that the mechanical demands of note-taking put restrictions on the encoding effect (Kobayashi, 2005). Mechanical demands of taking notes with a pen and paper may put restrictions on attention because of the demands of monitoring one’s hand-movements and products, labor involved, and limited time for writing (Kobayashi, 2005). In addition, rapid presentation of lecture information reduces time to take notes in a generative way (Kiewra, 1989). More attention must be spent to process the rapid or dense lecture presentation, thereby leaving few resources for note-taking activities aimed at encoding. Third, some types of learning outcome measures were not able to detect the
advantage of note-taking over no note-taking (Kobayashi, 2005). The issue of outcome measures will be discussed in the later paragraphs.

Nevertheless, other studies support the beneficial function of encoding. For example, Barnett et al., (1981) found that note-taking subjects with no opportunity for review recalled significantly more than listening-only subjects. It appeared that note-taking itself facilitated recall. Bohay, Blakely, Tamplin, and Radvansky’s (2011) study also found that note-taking enabled deeper comprehension and that people who took notes were more likely to elaborate on the material. The notion that note-taking drew mental resources away from memory and comprehension processes was challenged in this study. Moreover, their study did not find the benefit of external storage function because the effect of review after note-taking was not different from the effect of note-taking with no review.

Among the studies that showed the superiority of external storage function in note-taking, a common drawback was the failure to equate processing opportunities among the three groups: encoding, encoding-plus-storage, and external-storage (Kiewra, Dubois, Christensen, Kim, & Lindberg, 1989). Previously, the observed advantages of the encoding-plus-storage group may have been due to processing time rather than processing activities. The encoding-plus-storage group has twice the opportunity to process information, compared with the other groups (Kiewra et al., 1989). Thus, some changes were made in their study design to balance the processing opportunities. The encoding group viewed the lecture and took notes on two occasions; the encoding-plus-storage group viewed the lecture on one occasion and reviewed their notes on the second occasion, the storage group twice reviewed their borrowed notes. After accounting for the processing time of the three groups, the researchers concluded that an advantage was still found in encoding-plus-storage group on tests involving factual-recall and recognition performance but not on test measuring higher-order performance (Kiewra et al., 1989). The higher order tests, such as synthesis tests and application tests, show no
differences among the three groups. Therefore, a second opportunity to record notes or to review borrowed notes strengthens synthesis and application performance to a level comparable with taking and reviewing notes (Kiewra et al., 1989). This result indicates that as long as subjects have enough processing time, either through taking notes, reviewing notes, or a combination of both, they will have equal performance, especially on higher-order tasks. However, for tasks that require lower order cognition, such as factual recall, the utilization of both functions of note-taking is more effective. Therefore, when there are additional opportunities and sufficient time, the encoding function may be as effective as the storage function (Kiewra et al., 1989).

In summary, consider the example of the novice counselor-in-training who is working with a client. The trainee may be encouraged to take note in order to facilitate accurate recall and to generate connections among the client’s story and learned material. Research suggest that the encoding function of note-taking can help note-takers generate connections in environments similar to the unstructured and unrehearsed content that is typical of a session with a consumer seeing services. Also, the storage function of note-taking helps note-takers to review and recall the information. However, the encoding process might be less likely to happen because of the mechanical demands and time pressure of note-taking. In contrast, the storage function of note-taking allows more time for note-takers to review and process the materials. Therefore, the act of note-taking can be both beneficial and detrimental to client outcomes. Counselors-in training who over attend to note-taking tend to produce notes that look like verbatim transcripts and, in doing so, are likely to rely on less generative cognitive processes within their encounter with the client unless they process the information and engender meanings out of the information during the review of notes.
Factors Related to the Effect of Note-taking

Test Expectancy

Test expectancy has an influence on the quality of note-taking and recall of text (Oakhill & Davies, 1991). The results showed that subjects noted and recalled more of the high importance ideas in the text, especially when subjects were expecting a free-recall test, rather than a multiple-choice test. Thus, in order to heighten subjects’ performance, creating test expectancy for free-recall test may be suggested.

Prior Knowledge

Prior knowledge is another factor that may impact the effect of note-taking (Wetzels, Kester, Merrienboer, & Broers, 2010). Wetzels, Kester, Merrienboer, and Broers (2010) found that learners with high prior knowledge benefit from taking notes while activating prior knowledge, whereas note-taking has no beneficial effects for learners with limited prior knowledge. Note-taking during prior knowledge activation lowered mental effort and increased mental efficiency for high prior knowledge learners. For low prior knowledge learners, note-taking had the opposite effect. During note-taking, low prior knowledge learners needed more mental effort to activate previous knowledge and thus diminished their efficiency. The intervention of note-taking was not able to aid those with limited knowledge. Conversely, Peper and Mayer (1978) found different results. Among learners who were deficient in prior knowledge, note-takers performed better on far-transfer tasks than non-note-takers, who performed better on near-transfer tasks. Far-transfer test items require general conceptual information to arrive at a solution while near-transfer items demand the connections between concepts developed during class and new applications, such as fact retention and verbatim recognition (Kiewra, 1989; Peper & Mayer, 1978). However, for subjects possessing adequate knowledge, the activity of note-taking failed to increase generative processing and far-transfer achievement. Peper and Mayer (1978) speculated that subjects who were familiar with the lecture content formed connections whether they took notes or not. Subjects who
possessed less prior knowledge were more likely to rely on note-taking as a strategy to build connections.

**Strategic Knowledge**

The relationship between prior knowledge and the effect of note-taking is unclear, but knowing the purpose of note-taking (when and why to take notes), which is called “strategic knowledge,” may predict the performance (Castello & Monereo, 1998). Castello and Monereo (1998) hypothesized that strategic knowledge may be a more important factor related to performance than prior content knowledge. They found that people who were provided with strategic knowledge were still able to adapt to a task’s demands even if they did not previously have high content knowledge. The finding implies that persons need to be able to identify when and why they take notes in order to ensure better performance.

**Metacognitive Judgments**

Metacognitive judgments of learning can also predict test outcomes when note-taking is included among the predictor variables (Peverly et al., 2007). Metacognitive judgments of learning means learners’ judgments of how prepared they are to take a test or how well they did. Although background knowledge and metacognitive judgments of learning are related to test performance when note-taking is considered, they do not correlate significantly with quality of notes (Peverl et al., 2007). Confounding effects exist when the confounding elements are related with both the exposure and the outcome (Szklo & Nieto, 2007). Although background knowledge and metacognitive judgment are related with test performance (outcome), these two variables do not correlate with notes (exposure). Thus, background knowledge and metacognitive judgments would not confound the relationship between note-taking and test performance.

**Other Factors**

Kobayashi’s (2005) explored other factors affecting note-taking in his meta-analysis. For example, the lack of note-taking skills did not interfere with the encoding
function. Students’ spontaneous note-taking procedure (i.e. poor note-taking skill) did not reduce the encoding effect. Thus, even if note-takers do not receive training in note-taking, the function of encoding is not affected. There was no evidence that positive interventions heightened the benefits of note-taking. Whether the participants have previous note-taking skills will not be a concern in studying note-taking. Kobayashi (2005) also found neither level in schooling nor the length of presentation affected the benefits of note-taking. However, visual presentation of learning material interfered with the note-taking process and affected encoding effect (Kobayashi, 2005).

In summary, consider the example of the counselor-in-training who is faced with the challenge of taking notes within a client session. Counselors-in-training who expect to use their notes to recall information (e.g. in a supervision meeting) and those who have strategic knowledge of when and why to take notes would likely improve their recall and performance. Research suggests that counselors-in-training with background knowledge of their client, the self-efficacious expectation that they will be successful, or prior training in note-taking have no absolute advantage over counselors-in-training who have limited content knowledge, are less self-efficacious, and use poor note-taking strategies with regard to gaining benefits from note-taking.

**Note-taking and Outcome Measure**

The methodology and the format of outcome measure employed to detect the effects of note-taking on performance can affect the investigation of note-taking. For example, recall test formats detected the encoding effect of note-taking more than recognition and other higher-order performance tests (Kobayashi, 2005). On the other hand, encoding and generative effects of note-taking are undetectable on verbatim fact recognition tests. Poor performance on fact identification tests may be due to subject difficulty in identifying externally presented facts while engaging in generative procedures, which often proceed internally (Kobayashi, 2005). Furthermore, compared with non-note-takers, note-takers excelled on far-transfer test items, which required
general conceptual information to arrive at a solution. In contrast, non-note-takers excelled on near-transfer items, where students make connections between concepts developed during class and new applications, such as fact retention and verbatim recognition (Kiewra, 1989; Peper & Mayer, 1978). Moreover, note-takers and non-note-takers did not differ in their recall of basic technical facts; however, note-takers contained more idea units concerning underlying concepts and other relevant concepts, while non-note-takers did better at recalling technical symbols and examples and produced more vague summaries and connectives (Peper & Mayer, 1978). Similarly, Bohay et al. (2011) found that note-taking improved performance and had its primary influence on referential understanding, with a smaller influence at verbatim memory.

In summary, note-taking enhances higher level cognitive functions and benefits people in the ability of reasoning. If the outcome measure of note-taking performance is identification or recall of basic facts, then the value of note-taking might not be acknowledged. The benefit of note-taking may be realized only when performance tests measure generative learning, involving relating new materials to existing knowledge (such as far-transfer test) (Kiewra, 1989). The study results suggest that the benefit of note-taking should be viewed in a broader learning outcome, rather than just more learning overall (Peper & Mayer, 1978). In addition, the selection of outcome measure can explore not only whether note-taking aids learning but also what is learned and processed in note-taking (Stefanou et al., 2008).

**Format and Representation Level of Notes**

People generally fashion their own method of note-taking during their education or in their profession (Piolat et al., 2005). The strategies of notes can be classified as conventional notes, key points or linear notes, and matrix notes. According to the definition by Kiewra et al. (1991), conventional note-taking is typically verbatim. Alternative formats include:
A linear framework lists of the main topics and subtopics in an outline form and provide spaces between ideas for note-taking. A matrix framework presents the information in a two-dimensional table; main topics are named across the top of the page and subtopics are listed down the left margin. The internal cells are used for note-taking. (p.241)

The effectiveness of these three types of notes have been explored and compared. Middendorf and Macan (2002) found that there was no significant difference in judgment accuracy between conventional and linear note-taking strategies. However, Kiewra et al. (1991) found that matrix and linear notes contained significantly more lecture ideas than conventional notes, which meant that matrix notes were more complete than conventional notes for recall.

Other ways to evaluate notes are three levels of information representation, namely the surface form, textbase, and situation model levels (van Dijk & Kintsch, 1983, as cited in Bohay et al., 2011):

The surface form is a person’s verbatim memory of the words and syntax used. The textbase is a representation of the abstract idea units conveyed by language apart the surface form. Finally, the situation model is a person’s referential understanding of the described events. (p.63)

These three levels of representation can serve as a mental simulation that can characterize the cognitive process levels of the note-takers. Therefore, by identifying the formats and the representation levels of notes, researchers can examine what is cognitively processed among the note-takers.

In conclusion, note-taking is a complex cognitive process. The most effective note-takers appear to be persons who are able to utilize verbal working memory to multi-task between note-taking and comprehending. Less effective note-takers focus on one task or the other, and produce either unintelligible notes or verbatim transcripts which do not promote higher order processing if information. Note-taking is a process that may
benefit or interfere with integrating knowledge; note-taking is least effective when it is used as a mechanical strategy with the goal of reproducing as much material as possible. It appears that the benefit of note-taking is most apparent when notes are taken in a generative process that helps note-takers to synthesize and make connections. Also, a number of factors (test expectancy, prior knowledge, strategic knowledge, metacognitive judgments) and outcome measures (identification, recall, or reasoning) may influence the process and the performance of note-taking.

With this background in the general literature of note-taking, we now turn to a discussion of the literature that focuses upon the role of note-taking in the counseling relationship.

The Study of Note-taking in Counseling

When studying note-taking in counseling, there are similarities and differences compared with the investigation of note-taking in academia. Note-taking in counseling settings is similar to academic note-taking in that the function of note-taking is external storage and encoding. Research suggests that counselors use notes to impact these cognitive processes in the same manner as other groups of note-takers (Hartley, 2002). Within the counseling profession, note-taking has been anecdotally endorsed as a strategy to promote counselor complexity through generative learning (Prieto & Scheel, 2002). However, as can be seen from the literature of note-taking within other groups, note-taking also has the potential to become a mechanical strategy that promotes lower level cognitive processing.

The investigation of note-taking in counseling has been of a different nature from the investigations of note-taking among other groups. Most notably, the emphasis in the limited literature of note-taking in the counseling profession has focused on the impact of note-taking behavior on the therapeutic alliance and the perception on external observers (Hickling, Hickling, Sison, & Radetsky, 1984; Miller, 1992) rather than on the usefulness of notes (Hartley, 2002). The use of note-taking as a therapeutic tool is quite different
than note-taking as discussed in the historic literature of note-taking and may be unique to helping professionals. The discussion of the therapeutic impact of note-taking behavior on consumers in session is acknowledged as a related, yet distinct topic, which is not the focus of this literature review.

Unlike investigations of note-taking in academia, there is a lack of studies regarding the benefits of note-taking on counselors’ performance. In part, this may be because note-taking in counseling and note-taking in academia have different outcome anchors for success. For example, in academia, the outcome is measured by various kinds of academic tests, which are used to evaluate how well and in what aspects the subjects have learned the material. Yet, in counseling, counselors’ performance should be appraised differently to resemble the actual counseling practice.

There are many ways to evaluate counselors’ performance. Previous studies have focused on the impact of note-taking on clients’ perception of counseling and counselors (see Chapter one). However, to be parsimonious with the literature on note-taking in other disciplines, it is necessary to review studies of outcomes germane to counselors. These measures are counselors’ recall of interview and the judgment about clients’ problem.

Morran, Kurpius, Brack, and Brack (1995) developed a cognitive-skills model for counselor training and supervision. Two of the categories in training are a) attending to and seeking information about self, client and the therapeutic relationship and b) organizing and integrating information into viable hypotheses and client conceptualization. The first category pertains to gathering information for documentation, which could be potentially associated with the external storage function in note-taking. The second category concerns the organization of the information into hypotheses and thus could be related to the encoding function in note-taking. In the process of encoding, note-takers need to generalize and make connections among the information. This function may help counselors organize the information and further assist counselors in
forming hypotheses and judgment. Accordingly, the ability to recall information and to make clinical judgments can account for the outcome of counseling.

**Outcome Measure in Counseling: Recall**

In counseling practice, counselors need to document case information after each session. Collecting sufficient information is especially critical in intake interviews because the information is necessary to reach a preliminary formulation of the main presenting problems before counselors make any judgment about the client or provide any interventions (Carr & McNulty, 2006). Therefore, it is important to examine whether note-taking enhances counselors’ recall accuracy regarding case documentation. The measure of recall is relevant to the examination of note-taking and the practice of counseling.

Recall is characterized as either cued recall or pure recall. Cued recall means fact recognition, so the person does not need to reproduce information (Srull, 1984, as cited in Middendorf & Macan, 2002). Pure recall, which is also called free recall, means that people need to recall information solely from their minds. Measurement of free recall resembles the real counseling situation, where counselors need to document case information from their minds, not just recognizing facts. In addition, recall tests detect the encoding effect more than recognition and higher-order performance tests (Kobayashi, 2005). When subjects are expecting a recall test, rather than a multiple-choice test, subjects noted and recalled more of the high importance ideas (Oakhill & Davies, 1991).

**Outcome Measure in Counseling: Clinical Judgment**

In addition to obtaining clients’ information, it is important for counselors to accurately make clinical judgments about the client in order to provide further intervention. Recall and clinical judgment are independent outcomes of note-taking because the cognitive process involved in remembering facts is different from that in judgment (Middendorf & Macan, 2002). For example, Middendorf and Macan (2002) found that note-taking increased employment interviewers’ recall but not their judgment
about the interviewees. Clinical judgment may not solely rely on memory but also on the counselors’ capability to generate meaning about the clients’ problem. Counselors do not need to remember all the content to make a judgment. Yet, they need to make connections between what they hear from the client and their experience and knowledge. Thus, the generation process brought by note-taking can be evaluated in counseling.

When counselors move from original observations to clinical judgments, previous research suggested that the cognitive activity of mediational inferences is required (Hasse, Strohmer, Biggs, & Keller, 1983). According to Hasse, Strohmer, Biggs, and Keller (1983), “clinical judgment is a demanding task that requires the counselor to monitor behavior of the client, integrate these observations into inference about client status and causes of present behavior, make clinical predictions, and decide on appropriate intervention strategies” (p. 275). Hasse et al. (1983) proposed that the mediational inferences were important in accounting for variance in that judgment. Removing these inferences from a model of clinical judgment reduced the predictability both statistically and practically. Therefore, this study will evaluate counselors’ clinical judgment by measuring their mediational inferences ability and discovering how clinical judgment is affected by note-taking behavior.

Similarly, Murdock and Fremont (1989) proposed that attributions may play a role in counselor decision making. They thought that the clinical judgment process included four attributional dimensions: locus (whether the cause of the problem is internal or external), stability (whether the problem is long-term or temporary), globality (the degree to which the problem is pervasive in the client’s life), and controllability (the degree to which the client could control his/her difficulties). On the other hand, traditional models of clinical judgment emphasized variables such as treatment urgency and duration and severity of the client’s problems in predicting clinical judgments. Murdock and Fremont (1989) thought that including four attributional dimensions along with traditional diagnostic variables provided a more detailed picture of the clinical
judgment process. In their experiment, Murdock and Fremont (1989) found the two factors that best predicted treatment decisions: duration of the problem and stability of cause. However, other factors were related to clinical decision making as well. Thus, the ratings on four attributional dimensions and the factors addressed in traditional models will be used to evaluate counselor judgment.

In conclusion, there is not a comprehensive model that can fully describe the act of note-taking. The settings, the purposes, and the strategies of note-taking are very different and could affect the impact of note-taking. Furthermore, there are some inconclusive issues existing in the act and process of note-taking. It is still in discussion that for whom and under what condition note-taking will be most beneficial. Therefore, it is hard to develop a model that can depict the process of note-taking.

Developing a model that is applicable to all note-taking contexts is beyond the study scope of this project. However, it is possible to propose a model that can potentially explain the role of note-taking in counseling. Counseling is one of the settings that note-taking takes place. What is relevant to counselors’ note-taking may not be applicable to the note-taking in other settings. Therefore, in Chapter one, a model of note-taking distinctive to counseling is proposed. Compared with note-taking in academia, where the impact of note-taking is most examined by academic performance and test scores, the impact of note-taking on counselors’ performance is better determined by content recall, counseling skills, and counselors’ judgment. In addition, counseling is unique by its emphasis on working relationship with the clients and the therapeutic alliance, which could be affected by the interaction of the perception on clients, and the above three factors.

**Summary**

Note-taking is quite a demanding task, which involves considerable procedures that consume great cognitive efforts. Thus, many factors can affect note-takers in making their notes. Note-takers’ writing speed and fluency, their level of prior knowledge,
understanding about the timing of note-taking, metacognition about how well they have learned, and working memory span can all impact the quality of notes or the outcome of note-taking.

Even though note-taking is such a complicated task, the benefit it brings encourages people to continue taking notes. For example, the external storage function of note-taking makes it possible to have a document to review information when the source of information no longer exists. In this way, people can overcome the process of natural forgetting. Another advantage of note-taking is encoding. Scribbling something down can help note-takers become more focused and think more about the content. People may make connections and generate meaning out of what they hear by the act of note-taking. There is a discussion about which function of note-taking is more important. However, the results indicate that the two functions may be equally important, depending on the outcome measure and other related personal attributes. Each function is exhibited under different conditions.

Counseling is a new context to examine the effect of note-taking. Note-taking itself already involves multiple cognitive activities, such as comprehension, selection of information, and written production processes (Piolat et al., 2005). Yet counseling is another task that also involves many parallel functions, including intensive listening, responding, information gathering, comprehension, diagnosing, and action planning (Patterson, 1988). In order to perform multiple tasks simultaneously, certain simpler mental and physical tasks need to become automatic first. If too much attention is focused on listening and responding or writing notes, the higher order task of understanding the client diagnostically becomes less likely (Patterson, 1988). Also, visual presentation of material interferes with the note-taking process (Kobayashi, 2005). Obviously, counseling is a situation in which visual contact plays an important role. If counselors take notes, they have to direct visual contact either to their client or to their notes, under tremendous time pressure. Therefore, the uniqueness of the counseling
practice could interact with the note-taking process drastically and affect the benefit of note-taking.

The notes can serve as a window into the counselor’s thought processes, detailing the counselors’ diagnosis and intervention decisions. Note-takers may choose different strategies to record the notes, and their representation of notes can reflect their thinking level. For example, paraphrasing and summarizing serves as catalysts to stimulate deeper semantic processing, whereas transcribing verbatim does not (Kobayashi, 2005). The act of note-taking does not always activates generative process, especially when note-takers simply copy what they hear or see. The encoding effect can be limited by the quality of note-taking procedures that the note-takers employ. Thus, the three forms of notes, namely verbatim, linear and matrix, may contribute to the note-taking process differently. Matrix notes seem to be the most beneficial note-taking strategy because they are able to help note-takers make connections in the materials.

This chapter also provides rationales for the selection of the outcome measure in this study. The choice of the outcome measure can explore not only whether note-taking is advantageous but also in what aspects note-taking is beneficial. In this study, counselors can demonstrate their performance in two aspects. Initially, they show their understanding of the client by recalling specific information of the interview. In order to resemble the real practice and to better predict the function of note-taking, the recall process in counseling will not be the recognition of information. This study will require counselors to recall information purely from their minds. Subsequently, counselors have to utilize and synthesize information to provide accurate judgment. After all, integrating clients’ data is one of the counselors’ roles (Egan, 1982, as cited in Johnson & Heppner, 1989). Thus, the outcome selected in this study will reflect to what extent the information is retained and applied for counselors.

Chapter 3 presents a method to study two functions of note-taking in the context of counseling. Based on the literature, it is hypothesized that if note-taking functions as
external storage in counseling, it is expected that the counselors’ recall will improve because of taking notes. If note-taking functions as encoding, then one would expect to see improved recall as well as clinical judgment, which demands that the counselors make connections and elaborations. By separately examining the notes review and note-taking, this study will evaluate the idea that taking notes, whether by itself or in combination with review, leads to differential outcomes on counselors’ performance. It is also possible that counselors who only review notes prepared by others will perform better.
CHAPTER III

METHODOLOGY

Participants

Participants in this study consisted of entry level counselors-in-training enrolled in Master’s level training in Rehabilitation Counseling. Entry level counselors-in-training were selected to ensure that students have not had formal training at the Master’s level in note-taking skills. The total sample for this study consisted of 13 students. The participants were recruited from students who enrolled in the course “Micro-counseling,” which was a required course in the master’s level of counseling program. The students who enrolled in this class were second semester master’s students. They had taken “Theory of Counseling and Human Development Across Life Span” (3 credit hours) and “Introduction to Rehabilitation and Mental Health Counseling” (3 credit hours) before enrolling in “Micro-counseling.”

The study was conducted as part of “Micro-counseling” course, which provided counseling skills training. All students in the class participated in the note-taking learning exercises which were the procedures of the study. Only the outcome data for those students who agreed to participate as human subjects were available to the investigator for analysis as a part of this project. Data from students who did not agree to participate as human subjects were presented as a learning exercise in class, but were not a part of the analysis for this study. The researcher invited students as study participants by using a consent form, which included the information of this study. The subjects were notified that the participation in the research was voluntary and there were no penalty to those who did not participate. Also, the participation in this study was not related to their grades in the course.

The subjects had a week to decide whether to participate. When a student agreed to participate, he/she signed the consent form, filled in the demographic information, and returned these documents to a colleague. The colleague collected all study materials and
returned them to the investigator for analysis after the grades for “Micro-counseling” course were submitted.

There were 14 students enrolled in “Micro-counseling” and 13 of them agreed to participate. The participation rate of this class was 93%. The demographics of the participants are shown in Table 1. The demographics of this group of students were very similar with other Rehabilitation Counselor Education programs in the United States (e.g. Juergens, Smedema, & Berven, 2009).

Table 1. Demographics of Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>N = 13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male = 4 (30.7%)</td>
<td></td>
</tr>
<tr>
<td>Female = 9 (69.3%)</td>
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</tr>
<tr>
<td><strong>Age</strong> mean (min, max)</td>
<td>31.7 (22, 56)</td>
</tr>
<tr>
<td><strong>Undergraduate major</strong></td>
<td></td>
</tr>
<tr>
<td>Psychology = 7 (54%)</td>
<td></td>
</tr>
<tr>
<td>Other = 6 (46%)</td>
<td></td>
</tr>
<tr>
<td><strong>First language</strong></td>
<td></td>
</tr>
<tr>
<td>English = 10 (77%)</td>
<td></td>
</tr>
<tr>
<td>Other = 3 (23%)</td>
<td></td>
</tr>
</tbody>
</table>

**Stimulus Materials**

To assess recall of content and judgments, information about three hypothetical clients of counseling services was provided to counselors-in-training (Appendix A). The material was presented to subjects in one of two formats that contained identical material about one of three different hypothetical clinical cases. The first format for materials consisted of a written clinical note presumably taken during an intake interview with a client of counseling services. The second format consisted of the same material presented through an individual interview between the participant and one of three confederates trained by the researcher to role play clients of counseling services. The three confederates were trained to reliably reveal specific information provided by the
researcher to the participants. There were 15 most important facts contained in verbal statements made by the confederates in all sessions (Appendix B).

Two procedures were applied to confirm whether the analogue clients consistently addressed the cases. First, the analogue clients were recruited for this study only if they could reliably demonstrate 15 facts in two sessions. After the participants completed all the sessions, all the videos were examined to see if 15 facts consistently appeared in all sessions. Unfortunately, there were eight of 26 sessions in which the analogue clients missed certain facts. Among these eight sessions, three facts were missing in one session and one fact was missing in the rest seven sessions. The participants’ recall scores in those sessions were adjusted accordingly.

In addition, an expert counselor made clinical judgment about the same case twice based on the two different videos recorded by the same analogue client. There was a week intermission between the two evaluations. The correlation between the two ratings on the same case was calculated to ensure the analogue clients present the case reliably. The Spearman’s rho revealed a statistically significant relationship with alpha level of 0.05 between the first and the second evaluation for Case B ($r_s = 1.00, p = 0.001$) and Case C ($r_s = 0.889, p = 0.003$). For Case A, the relationship was significant at the alpha level 0.10 ($r_s = 0.637, p = .089$).

Information provided to the subjects through written notes and interview included therapy history, circumstances of the interview, community adaptation, and behavioral disturbance because these topics were important in predicting treatment choice (Greenblatt & Kleinmuntz, 1984). In addition, the basic demographic information of these cases was addressed. Information concerning the cases were obtained from “Marital crisis and short-term counseling: A casebook” (Freeman, 1982), and “ACA ethical standards casebook” (Herlihy & Corey, 1996). The cases were equal in their complexity. The three selected case notes are in the Appendix A.


**Procedures**

This study was conducted in the course “Micro-counseling” to measure the counseling trainees’ note-taking effects on their performance. One of the objectives of this course was to ask appropriate questions and maintain good working relationship with clients during the intake interview. Prior to the study procedures, each participant received group training in conducting an intake interview. The training consisted of a review of the purpose of an intake interview, the content that may be included in an intake interview, and communication skills used to solicit information during an interview. Participants were required to individually practice these skills under supervision and received feedback from the course instructor.

The procedure for each participant consisted of a repeated measure across four treatments: (a) interview without note-taking (N1), (b) interview with note taking but no note reviewing (N2), (c) interview with note-taking and review (N3), and (d) no interview with review of notes (N4). The graphic representation of the study procedure is on Figure II.

In addition, the treatment order and case information were randomized for the participants to decrease the effects that those factors might have on outcomes. The order of treatment is presented in Table 2. For example, participant number one interviewed Case A without taking notes (N1) first, and then interviewed Case B with note-taking (N2, N3). Last, participant number one reviewed the provided notes of Case C (N4). Similarly, other participants received the treatments in different orders with different cases. In addition, participants in the note-taking with review situation (N3) only reviewed the notes they took by themselves. Thus, the treatment of taking notes and no reviewing (N2) was always followed by the situation of taking notes and reviewing (N3). After participating in the treatment of N2, subjects received the evaluations without reviewing their own notes. Then, they were given their own notes to review (N3) and completed the evaluations again. Thus, N2 and N3 were combined into one treatment as the researcher
decided the sequence of treatments (see Table 2). However, the dependent variables (i.e. recall and judgment accuracy) were measured separately in these two situations. Each interview was 15 minutes.

Figure 2. *Study Procedure*
Table 2. *Order of Treatment*

<table>
<thead>
<tr>
<th>Analogue clients</th>
<th>Case A</th>
<th>Case B</th>
<th>Case C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>First sequence</td>
<td>Second sequence</td>
<td>Third sequence</td>
</tr>
<tr>
<td>1</td>
<td>N1</td>
<td>N2,N3</td>
<td>N4</td>
</tr>
<tr>
<td>2</td>
<td>N2,N3</td>
<td>N4</td>
<td>N1</td>
</tr>
<tr>
<td>3</td>
<td>N4</td>
<td>N1</td>
<td>N2,N3</td>
</tr>
<tr>
<td>4</td>
<td>N2,N3</td>
<td>N1</td>
<td>N4</td>
</tr>
<tr>
<td>5</td>
<td>N2,N3</td>
<td>N4</td>
<td>N1</td>
</tr>
<tr>
<td>6</td>
<td>N4</td>
<td>N1</td>
<td>N2,N3</td>
</tr>
<tr>
<td>7</td>
<td>N1</td>
<td>N2,N3</td>
<td>N4</td>
</tr>
<tr>
<td>8</td>
<td>N2,N3</td>
<td>N4</td>
<td>N1</td>
</tr>
<tr>
<td>9</td>
<td>N4</td>
<td>N1</td>
<td>N2,N3</td>
</tr>
<tr>
<td>10</td>
<td>N1</td>
<td>N2,N3</td>
<td>N4</td>
</tr>
<tr>
<td>11</td>
<td>N2,N3</td>
<td>N4</td>
<td>N1</td>
</tr>
<tr>
<td>12</td>
<td>N4</td>
<td>N1</td>
<td>N2,N3</td>
</tr>
<tr>
<td>13</td>
<td>N4</td>
<td>N1</td>
<td>N2,N3</td>
</tr>
</tbody>
</table>

*Note.* N1 = no note-taking; N2 = taking notes/ no review; N3 = taking notes with review; N4 = review notes only.

**Instructions**

The participants were asked to complete a 15-minute intake interview with the analogue client. Before the *no note-taking* session (N1), the participants were instructed as follows:

“In a few minutes you will provide a 15-minute intake interview session for a client. In this session, you need to gather information about your client, including his/her name, age, main concerns, and other relevant information, in order to provide or refer to the best treatment after your interview. However, in the meantime, you are still required to demonstrate your micro-counseling skills, which is very important in maintaining therapeutic alliance with your client. After this session, you will be asked to recall and write down case information. You will also be asked about your opinions of this client’s problem. *You just need to focus on your client and you don’t need to take any notes.*”

For the *note-taking only* session (N2), the participants were provided with a blank white A4 size paper and were instructed as follows:
“In a few minutes you will provide a 15-minute intake interview session for a client. In this session, you need to gather information about your client, including his/her name, age, main concerns, and other relevant information, in order to provide or refer to the best treatment after your interview. However, in the meantime, you are still required to demonstrate your micro-counseling skills, which is very important in maintaining therapeutic alliance with your client. After this session, you will be asked to recall and write down case information. You will also be asked about your opinions of this client’s problem. You are required to take notes on this blank paper and use your best note-taking skills. Your notes will be collected for you to review afterward.”

For the taking note and review session (N3), the participants reviewed their own notes taken in the session. After they completed the three evaluations in the taking notes and no note reviewing situation, they received their own notes and were instructed as follows:

“Later you will receive your own notes taken in the session. You have 10 minutes to read them. After that, you will be asked to recall the interview and rate your client’s problem just like the three assessments you previously received. You will not take any notes during your review.”

For the review notes only session (N4), the participants were instructed as follows:

“In a few minutes, you will be provided with some information about a client. You have 15 minutes to read it. After that, you will be asked to recall and write down case information. You will also be asked about your opinions of this client’s problem. You will not take any notes during your review.”

After completing an interview or note review, the participants were asked to finish three assessments: the recall of case information, clinical judgment, and general judgment toward the client. The participants received the assessments immediately upon
completing interview or note review. The participants were instructed to write down as much as they could remember about the conversation they had with the client. The instructions before the assessments were as follows:

“Now you need to write some facts about this client and this interview. You will write down as many details as you can about the client. Please write down the facts, not your conjectures. You have unlimited time to complete this form.”

In addition, the participants were also asked to provide their perceptions about the client and rate the client’s presenting problem. The instructions were as follows:

“There are two forms for you to rate this client and his/her problem. Please make the judgments based on this interview and your understanding of the client. You have unlimited time to complete this questionnaire.”

**Outcome Measures (Dependent Variables)**

**Recall Accuracy**

The recall accuracy measure assessed participants’ memory of interview events. Participants were asked to list what they remembered from the interview. To assess recall, the number of correct facts among 15 facts offered by the participants was the score of recall accuracy. The written responses were independently examined by a rater naïve to the study. The score for recall accuracy could range from zero to 15.

However, when the analogue clients forgot to address certain facts in the sessions, the participants’ score for recall accuracy was modified. For example, if the analogue client forgot to address one of the 15 facts, the participants’ score was adjusted by the proportion of the 14 facts. This score was calculated by the points received multiplied by 15 and divided by 14. If the participant got nine points within the 14 facts, his/her adjusted points were 9.6.
Clinical Judgment Accuracy

In the second evaluation, participants responded to the four attributional dimensions items and the four items in order to rate the client’s problem. These items were constructed by Murdock and Fremont (1989), and no reliability and validity data were available. Each of these items began with a stem that presents the dimension in question and was followed by a Likert scale or a dichotomous response. The four attributional dimensions items were as follows:

1. To what degree is the client’s problem caused by factors which he or she could potentially control? *Totally controllable (1) to not at all controllable (7)*;
2. To what degree do you feel the problem is caused by factors internal versus external to the client? *Internal (1) to external (7)*;
3. To what degree do you feel the problem is caused by factors which are enduring versus transient? *Enduring (1) to transient (7)*;
4. To what degree is the problem caused by factors specific to the situation versus factors which are pervasive across situation? *Specific (1) to pervasive (7)*.

The four other items were about the first choice of treatment for the client and the characteristics of the problem. The items were as follows:

5. What is your first choice of treatment for the client after this interview?
   
   (a) no treatment, (b) brief counseling (1-3 sessions), (c) short-term counseling (4-10) sessions, and (d) long-term counseling (10 or more sessions).

6. How would you rate the severity of the client’s presenting problem?
   
   *Mild (1) (2) (3) (4) (5) Crisis*

7. Please rate the duration of the problem.
   
   (1) short term (2) long term
8. Please rate treatment urgency of this client.

*Stable at present (1) (2) (3) (4) (5) (6) Crisis*

The accuracy of judgments is reported as a score that represents a difference score that is calculated between each participant’s total score and a criterion score which consists of the mean score from three experienced counselors who reviewed case materials, observed an interview with a confederate, and completed the judgment assessment. When any two of these three experienced counselors had the same rating on the items for the same case, the two identical rating were considered the criterion score of that item. When all three counselors had three different ratings for the same item, their average ratings became the criterion score of that item. Among the data obtained from the three expert counselors, the intra-class correlation coefficient is .694, $p<.05$, which indicates that there was a significant inter-rater agreement among the three counselors.

Each participant’s rating was compared with the criterion score. For each item, the participants got either one or zero points, depending on the closeness of their ratings with the criterion score. For the items numbered 1-4, 6, and 8, if the participant’s rating was the same as the criterion score, or one point higher or lower than the criterion score, the participants got one point for this item. For example, if the criterion score was 6, the participants who rated 5, 6, or 7 got one point, while other ratings would get zero points for this item. For the item numbered 5 and 7, the participants needed to rate the item the same as the criterion score to get one point, otherwise they would get no points for these two items. Therefore, the total points of these eight items were eight.

**General Judgment**

Participants’ perceptions and general judgment about the three analogue clients were measured by semantic differential (SD) technique. This measure was chosen because it is known that novice counselors’ cognitive competency is not as sophisticated as expert counselors. Expert and novice counselors differ in encoding, organizing and
applying information (Etringer, Hillerbrand, & Claiborn, 1995). Because novice counselors’ cognitive skills are not fully developed to make valid clinical judgments, the measure of general judgment is also applied to provide more information about the outcome on judgments.

The semantic differential (SD) scale used in this study consisted of nine bipolar scales spaced on a seven-point scale which represented the three common factors - Evaluative, Activity, and Potency - previously identified by Osgood, Suci, and Tannenbaum (1957, as cited in Kaplan, 1972). The Evaluative factor was represented by the following dichotomies: pessimistic-optimistic, happy-sad, sick-healthy. The Potency factor was represented by unstable-stable, strong-weak, rational-irrational dichotomies. The activity factor was represented by the active-passive, tense-relaxed, anxious-relaxed dichotomies. These bipolar adjectives were selected by their appropriateness for rating a counseling client. The adjective pairs were randomly ordered and counterbalanced for directionality to minimize the potential for a response set by the participants. The bipolar adjectives offered response choices from 1 to 7, from negative to positive extremes, or vice versa. However, no reliability or validity was obtained for this SD scale. The participant evaluated the concepts on each of the bipolar scales. The point on each scale is separately recorded. No total scores were calculated on the SD measure. The evaluation materials used in this project are presented in Appendix C.

**Type of Notes**

The participants’ notes were analyzed qualitatively to describe the note-taking strategies used by the participants. The investigator counted the number of words each participant wrote and described the method the participant used to organize the notes. When the content of notes was transcribed by the order of time and contained no other forms of organization, these notes were classified as verbatim notes. When there were bullets contained in the notes or the content of notes was numbered, then these notes were
regarded as key point notes. When there was a two-dimensional table in the notes, these notes were regarded as matrix notes.

**Analysis**

MANOVA was applied to see if there were significant differences in dependent variables (i.e. recall and clinical judgment) under four treatments. The participants’ general judgment on the SD scale was separately compared under each note-taking intervention. For each case under each intervention, the participants’ ratings on the same scale were averaged first and created nine ratings. As a result, there were four sets of nine ratings for each case. Correlations of these four sets of ratings were calculated to identify whether participants’ general judgments were significantly different under the four interventions.

A descriptive analysis was used to report the types of notes counselors-in-training took during the interview. The description consisted of the number of words recorded by the participant and the method used to organize those words.
CHAPTER IV
RESULTS

The purpose of this research is to investigate whether counselors’ performance was different because of taking notes. Specifically, three research questions guided this research: (a) Are there differences in content recall accuracy (number of items correctly recalled) among the four note-taking interventions (i.e. no note-taking, taking notes without reviewing, taking notes and reviewing, only reviewing notes) for counselors-in-training? (b) Are there differences in judgment (number of accurate clinical impression items identified and general judgment scales) among the four note-taking interventions for counselors-in-training? (c) Which of the three note-taking strategies (verbatim, linear, matrix) do counselors-in-training spontaneously use to take notes?

In order to answer these questions, participants of this study underwent four note-taking interventions and were evaluated by their recall and clinical judgment. The means, standard deviation, and minimum and maximum scores of each intervention were recorded in Table 3. Most subjects’ scores on recall and clinical judgment did not reach the highest or lowest points of the evaluations, which implies that the assessments were effective in distinguishing subjects’ performance on the outcomes. For recall, the total of points was 15 and the points that subjects received were between 6 and 15. The means were around 10. Subjects got the highest points in the review notes only condition (N4), and they got the lowest points in the taking notes without reviewing condition (N2). For clinical judgment, the total of points was 8 and the points that subjects received were between 2 and 8. The means of clinical judgment were around 6. Subjects still got highest points in the review notes only condition (N4), but they got the lowest points in the no note-taking condition (N1).
Table 3. Descriptive Statistics of Note-taking Effect on Recall and Clinical Judgment

<table>
<thead>
<tr>
<th></th>
<th>N1D1</th>
<th>N2D1</th>
<th>N3D1</th>
<th>N4D1</th>
<th>N1D2</th>
<th>N2D2</th>
<th>N3D2</th>
<th>N4D2</th>
</tr>
</thead>
<tbody>
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<td>N</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
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</tr>
<tr>
<td>mean</td>
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<td>10.09</td>
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<td>5.92</td>
<td>5.92</td>
<td>6.23</td>
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</tr>
</tbody>
</table>

Note. N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only; D1 = recall; D2 = clinical judgment.

Recall and Clinical Judgment

The first and second research questions concerned how counselors’ ability to recall and make clinical judgment was affected by taking notes. A MANOVA examined recall and clinical judgment as dependent variables and note-taking behavior as the independent variable. It showed a significant within-subjects effect for the two dependent variables as a group in relation to the four note-taking behaviors (F (6,70) = 2.475, p = 0.031). However, univariate analyses for effect note-taking indicated that recall was significant (F (3,36) = 3.214, p = 0.034, sphericity assumed), but not clinical judgment (F (3,36) = 1.936, p = 0.141).

Table 4 presents pairwise comparison scores using the Least Significant Difference (LSD) test. It indicated that the mean score of recall for the *review notes only* (N4) condition (M = 11.77, SD=1.69) was significantly higher than the *note-taking/no review* (N2) condition (M = 9.93, SD = 1.25) and the *note-taking with review* (N3) condition (M = 10.09, SD = 1.89) (p = 0.017, 0.026). However, the *no note-taking* (N1) condition (M = 10.35, SD = 1.86) did not differ significantly from the *note-taking/no review* (N2), *note-taking with review* (N3), and *review notes only* (N4) conditions (p = 0.539, 0.755, 0.052). Taken together, these results suggested that note-taking did have an effect on novice counselors’ performance, particularly on their recall. Specifically, the results showed that when counselors only reviewed the provided notes, they recalled
more facts than when they took notes while counseling. However, taking notes in session did not appear to significantly enhance novice counselors’ recall of facts.

Table 4. Pairwise Comparisons of Recall

<table>
<thead>
<tr>
<th>Measure recall</th>
<th>(I) Notetaking</th>
<th>(J) Notetaking</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig. a</th>
<th>95% Confidence Interval for Difference a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N1</td>
<td>N2</td>
<td>.419</td>
<td>.663</td>
<td>.539</td>
<td>-1.025 - 1.864</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N3</td>
<td>.262</td>
<td>.821</td>
<td>.755</td>
<td>-1.527 - 2.050</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N4</td>
<td>-1.423</td>
<td>.539</td>
<td>.659</td>
<td>-2.859 - 0.012</td>
</tr>
<tr>
<td>N1</td>
<td>N2</td>
<td></td>
<td>-1.419</td>
<td>.663</td>
<td>.539</td>
<td>-1.864 - 1.025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N3</td>
<td>-.158</td>
<td>.476</td>
<td>.746</td>
<td>-1.194 - .879</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N4</td>
<td>-1.842 *</td>
<td>.665</td>
<td>.017</td>
<td>-3.292 - -.393</td>
</tr>
<tr>
<td>N2</td>
<td>N1</td>
<td></td>
<td>-.262</td>
<td>.821</td>
<td>.755</td>
<td>-2.050 - 1.527</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N3</td>
<td>.158</td>
<td>.476</td>
<td>.746</td>
<td>-.879 - 1.194</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N4</td>
<td>-1.685 *</td>
<td>.661</td>
<td>.026</td>
<td>-3.125 - -.244</td>
</tr>
<tr>
<td>N3</td>
<td>N1</td>
<td></td>
<td>1.423</td>
<td>.659</td>
<td>.052</td>
<td>-.012 - 2.859</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N2</td>
<td>1.842 *</td>
<td>.665</td>
<td>.017</td>
<td>.393 - 3.292</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N3</td>
<td>1.685 *</td>
<td>.661</td>
<td>.026</td>
<td>.244 - 3.125</td>
</tr>
</tbody>
</table>

Note. Based on estimated marginal means. N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only.

a. Adjustment for multiple comparisons: Least Significant Difference. * The mean difference is significant at the .05 level.

In terms of clinical judgment, the mean in the review notes only condition (N4) was still the highest (M = 6.23, SD = 1.17). Subjects got the most correct ratings when they only reviewed the provided notes. However, there were no statistically significant differences between group means of clinical judgment. The performance of clinical judgment was similar for all participants across the four note-taking interventions. Whether counselors-in-training take notes, do not take notes during the counseling
sessions, or only review provided notes without interacting with the client, their clinical judgment ability remains the same.

**General Judgment**

The second research question also concerned whether counselors’ general judgment was different across the interventions in consideration of their limited clinical experience. Applying the semantic differential (SD) techniques, this study included nine bipolar scales spaced on a seven-point scale to evaluate the subjects’ general judgment. Each rating evaluated by the subjects who interviewed the same case in the same treatment was averaged, so there were nine means created in each intervention for each case. For example, three subjects evaluated client Case A under the condition of no note-taking. Their ratings on scale number one were averaged and got a mean of 4.67 (Table 5). The other ratings were averaged as well and created nine means, which represented the ratings of general judgment under the intervention of no note-taking. Ratings of other interventions and with other cases were calculated in the same way. Results of the ratings from three cases were presented in Tables 5, 6, and 7.

Table 5. *Means of General Judgment for Case A*

<table>
<thead>
<tr>
<th>SD scales Note-taking</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
<th>#9</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>Mean 4.67</td>
<td>4.00</td>
<td>6.00</td>
<td>6.00</td>
<td>3.00</td>
<td>1.67</td>
<td>1.67</td>
<td>3.33</td>
<td>5.33</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>N2</td>
<td>Mean 5.20</td>
<td>4.00</td>
<td>5.20</td>
<td>6.20</td>
<td>4.40</td>
<td>2.00</td>
<td>1.60</td>
<td>2.80</td>
<td>3.80</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<td>5</td>
</tr>
<tr>
<td>N3</td>
<td>Mean 5.40</td>
<td>4.20</td>
<td>5.40</td>
<td>5.60</td>
<td>4.00</td>
<td>1.80</td>
<td>1.60</td>
<td>3.40</td>
<td>3.40</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>N4</td>
<td>Mean 4.00</td>
<td>4.20</td>
<td>6.40</td>
<td>6.20</td>
<td>2.20</td>
<td>2.80</td>
<td>2.20</td>
<td>1.80</td>
<td>6.40</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

*Note.* N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only. SD = semantic differential.
Table 6. Means of General Judgment for Case B

<table>
<thead>
<tr>
<th>SD scales</th>
<th>Note-taking</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
<th>#9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N1</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note-taking</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N1</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N2</td>
<td>Mean</td>
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<td></td>
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<td>Mean</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>N4</td>
<td>Mean</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only. SD = semantic differential.

Table 7. Means of General Judgment for Case C

<table>
<thead>
<tr>
<th>SD scales</th>
<th>Note-taking</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
<th>#9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N1</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N2</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>N3</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N4</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only. SD = semantic differential.

Spearman’s rank order correlation was applied to examine whether participants’ general judgment ratings were correlated between the four note-taking interventions. As
shown in Table 8, when participants provided judgments for Case A, the Spearman’s rho revealed a statistically significant relationship between the no note-taking (N1) and the other three conditions. The ratings in the no note-taking (N1) condition were correlated with the other three conditions. On the contrary, the ratings in review notes only (N4) condition were not correlated with either the taking notes/no review (N2) or the taking notes with review (N3) conditions. Therefore, when participants did not take notes, they made similar judgments with those who were in the other three conditions. Yet, when participants only reviewed the provided notes, they made different general judgments about the client compared with those who took notes during the counseling session.

Table 8. Spearman’s rho Correlation of General Judgment for Case A

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.806**</td>
<td>.818**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.009</td>
<td>.007</td>
</tr>
<tr>
<td>N2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.806**</td>
<td>1.000</td>
<td>.979**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.009</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.818**</td>
<td>.979**</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>.805**</td>
<td>.536</td>
<td>.534</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.009</td>
<td>.137</td>
<td>.139</td>
</tr>
</tbody>
</table>

*Note.* N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only.
**Correlation is significant at the 0.01 level (2-tailed).

For case B, the Spearman’s rho reveals significant results between the review notes only (N4) and the taking notes/no review (N2) as well as the taking notes with review (N3)
conditions in general judgment. Table 9 shows that the ratings in the *review notes only* (N4) condition were correlated with those in the *taking notes/no review* (N2) and *taking notes with review* (N3) conditions. However, the ratings in *no note-taking* (N1) condition were not correlated with those in the other three conditions. Thus, when participants did not take notes during the session, they developed different judgments from the participants who took notes during the session and those who only reviewed provided notes. Participants who took notes during the session made similar judgments as those who only reviewed notes. For Case C, Spearman’s rho correlation revealed the same pattern as Case B (Table 10).

Table 9. *Spearman’s rho Correlation of General Judgment for Case B*

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.460</td>
<td>.553</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.213</td>
<td>.123</td>
</tr>
<tr>
<td>N2</td>
<td>Correlation Coefficient</td>
<td>.460</td>
<td>1.000</td>
<td>.932**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.213</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N3</td>
<td>Correlation Coefficient</td>
<td>.553</td>
<td>.932**</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.123</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N4</td>
<td>Correlation Coefficient</td>
<td>.643</td>
<td>.868**</td>
<td>.835**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.062</td>
<td>.002</td>
<td>.005</td>
</tr>
</tbody>
</table>

*Note.* N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only.

**. Correlation is significant at the 0.05 level (2-tailed).
Table 10. Spearman's rho Correlation of General Judgment for Case C

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Correlation Coefficient</td>
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<td>.430</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.248</td>
<td>.248</td>
</tr>
<tr>
<td>N2</td>
<td>Correlation Coefficient</td>
<td>.430</td>
<td>1.000</td>
<td>1.000**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.248</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>N3</td>
<td>Correlation Coefficient</td>
<td>.430</td>
<td>1.000**</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.248</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>N4</td>
<td>Correlation Coefficient</td>
<td>.494</td>
<td>.899**</td>
<td>.899**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.177</td>
<td>.001</td>
<td>.001</td>
</tr>
</tbody>
</table>

Note. N1 = no note-taking; N2 = taking notes/no review; N3 = taking notes with review; N4 = review notes only.
**. Correlation is significant at the 0.01 level (2-tailed)

To sum up, based on participants’ ratings of Case B and Case C under different note-taking conditions, participants showed unique ratings of general judgment when they did not take notes during the session. Refraining from taking notes in the session seemed to impact participants’ general judgment. However, in the condition of Case A, the only dissimilar relationship occurred between the review notes only and the taking notes conditions. Therefore, although participants’ clinical judgment ability did not differ across the four note-taking interventions, the result from general judgment indicated that there were some variations when participants developed their judgments and perceptions about the client.

The Analysis of Notes

The last research question concerns the type of note-taking that participants applied during counseling. The quantitative analysis of the notes indicated that the range
in the number of words contained in participants’ notes was very large. Individual
numbers of words taken during the session ranged from 2 to 71, with a median of 34, a
mean of 38.46, and a range of 69. Thus, within the 15-minute counseling session,
participants wrote an average of 2.5 words per minute.

Qualitative analysis was applied to examine the type of notes that participants
took. Four participants took notes without any identifiable organization, which were
classified as verbatim notes. In addition, four participants used obvious bullets in their
notes. One participant listed facts on each horizontal line without using bullets. One
participant developed several pre-determined headings in the notes and wrote notes under
each heading. Three participants wrote some key words and put several bullets after each
key word. Because these participants used bullets in the notes or organized the notes as
they used bullets, this linear format was regarded as key point notes. Last, no participants
used two-dimensional tables to create a matrix framework in the notes. See Appendix D
for sample notes.
CHAPTER V
DISCUSSION

The effect of note-taking has been studied in many academic and non-academic settings, and the functions of note-taking have been proven to be beneficial in many settings (e.g. Carter & Van Matre, 1975; Horowitz & ForsterLee, 2001; Middendorf & Macan, 2002; Peper & Mayer, 1978). Note-taking may be helpful because notes serve as external storage and encoding information (Kiewra, 1989). Note-takers can store the information from a transient source such as a lecture for later review and manage information while taking notes. Accordingly, note-takers may be able to remember more content and have better understanding of the information than people who do not take notes because the act of note-taking and reviewing notes serve as a strategy for both external recall and information synthesis.

However, while note-taking is clearly an effective strategy for content in a setting in which information is presented by a speaker to a participant, it is less clear if note-taking is an effective strategy for recall and accurate judgment in settings in which an interactive purposeful dialogue occurs. For example, counseling is not a one-way communication like classroom lectures. Neither is counseling a process that simply collects or records information. Counseling is a practice that involves unique communication styles and professional interaction processes. Therefore, the advantages of note-taking may not be as helpful for counselors.

This study examined the impact of note-taking on subjects’ interview recall and judgments in terms of their relationship with the two functions of note-taking: external storage and encoding (See Figure II). The research tested the storage function of note-taking by comparing the performance of scenarios in which subjects reviewed their notes with those in which subjects were forbidden to review them. The function of external storage was also tested by reviewing the provided notes scenario. The research tested the encoding effect of note-taking by comparing outcomes of non-note-takers with note-
takers who were given no opportunity to review their own notes afterward. Thus, when participants only take notes without review, they only use the function of encoding, which is designed to affect subjects’ recall and clinical judgment. When participants take notes and review them, it was hypothesized that subjects would have even better recall and clinical judgment because they grasped the information twice and utilized the two functions of note-taking. When novice counselors only reviewed notes, it was expected that they would have better recall because of the function of external storage and having enough time for encoding (Kiewra et al., 1991).

**Recall**

The analysis showed that subjects’ ability to recall information was better when they focused on reviewing the provided notes than they were under the two note-taking conditions. This result is consistent with Knight and McKelvie’s (1986) study, which also reported the effectiveness of provided notes. However, the benefit of reviewing personal notes was different in the present study as compared to the results reported by Knight and McKelvie. The function of external storage is assumed to help subjects to recall more after reviewing their own notes. Knight and McKelvie (1986) did find that subjects who reviewed personal notes performed at a level intermediate between those who reviewed provided notes and those who took notes without reviewing them. In contrast, the current study did not find any gains from reviewing personal notes. The current analysis showed that the taking notes with review condition did not outperform the other three conditions (i.e. taking notes/no review, no note-taking, and only reviewing notes). Although the condition of taking notes and reviewing them allowed two opportunities to encode information, novice counselors in this situation did not benefit from the extra opportunity of reviewing in terms of recall. This result is also inconsistent with the findings from Kiewra et al.’s (1991) study, where taking notes and review condition led to better recall.

Thus, the current results partially supported the function of external storage. The external function is exhibited only when the notes are complete and organized. Novice
counselors’ personal notes are not as detailed or as accurate as provided notes because subjects are busy performing many skills in the counseling session. Novice counselors do not have enough time and attention to take notes and thus create less useful notes to review. Accordingly, they cannot benefit from incomplete notes on recall. Less detailed notes do not help counselors as much as they help students. Another explanation is that students can take more complete notes during a lecture than counselors do in a counseling session. Thus, students can still benefit from personal notes.

Furthermore, the current study also found that subjects’ recall was not better when they took notes in counseling sessions as compared to not taking notes sessions. Subjects’ capabilities of remembering clients’ information were not affected by the act of taking notes. This is consistent with other studies conducted on students (Kiewra et al., 1991; Knight & McKleive, 1986), where the taking-notes-only group did not outperform the non-note-taking group in the recall test. Therefore, the modest effect of note-taking on recall which reflects the encoding of information is replicated in the present study.

Noticeably, recall performance was the same between only reviewing notes and only providing counseling without taking notes ($p = 0.052$). This result suggests that the effect of encoding on recall is observed during only reviewing notes and only providing counseling. Kiewra et al. (1991) concluded that lecture learning was so demanding that little meaningful encoding actually occurs during note-taking. The current result confirms that counseling is also a very demanding task that allows very little effect of encoding to happen while writing notes. The only time for counselors to encode information might be times when they are less distracted, such as reviewing notes and only providing counseling.

Moreover, although participants only focus on one task in reviewing notes and only providing counseling conditions, the task in these two conditions are quite different. While reviewing notes, subjects read notes that are complete and organized in a quiet room without any distractions. In contrast, when subjects provided counseling, even
without taking notes, they had to interact with the client, listen to important information, and demonstrate their counseling skills. In performing this complicated task (i.e. counseling), subjects’ recall of was similar to their recall of material when they reviewed organized notes. When counselors focus on interacting with their client without performing a second task, they can utilize the function of encoding as effectively as when they review complete notes. Therefore, it is suggested that counselors-in-training would better focus on working with their clients without taking notes if they cannot create complete and useful notes in a session.

Moreover, the function of encoding is not beneficial when counselors-in-training attempt to perform both counseling and note-taking simultaneously. Counseling is a complex task, and the addition of note-taking to a complex task (especially for counselors-in-training) may be not helpful, which could be explained by the insignificant difference on recall between the taking notes and no note-taking conditions. The present study results imply that in the note-taking condition novice counselors still focused on working with the client and paid very little attention to taking notes. Performing two difficult tasks (i.e. taking notes and doing counseling) was demanding and novice counselors needed to choose only one focus (i.e. working with the client). Accordingly, taking notes did not enhance the ability to recall in counselors’ mental processes. As Kobayashi (2005) proposed, the mechanical demands of writing notes and rapid presentation of information put restrictions on attention. In counseling sessions, the demonstration of counseling skills adds another restriction and limits the function of encoding. Schuh (1978) also argued that the sensory motor task of note-taking may prevent a stable structural memory trace from being established.

As a result, when subjects only provided counseling, their recall was as good as when they only reviewed notes ($p = 0.052$). However, when they started to take notes in the session, their recall performance was no longer as good as reviewing notes ($p = 0.017$). Therefore, it is suggested that taking notes takes away partial attention or efforts
from the subjects. Novice counselors’ capability of recall was diminished by taking notes when comparing with the reviewing notes only condition.

**Clinical Judgment**

Note-taking and the process of reviewing notes are also reported to be beneficial because they enhance note-takers’ ability to process and manage information (Kiewra, 1989). If note-taking helps to manage information, people who take notes are expected to have improved judgment (Middendorf & Macan, 2002) and thus counselors who take notes should have improved clinical judgment.

However, results of the present study suggest that subjects’ performance on clinical judgment was similar across the four note-taking situations. Although notes enhanced the subjects’ recall of information, notes did not improve the accuracy of the subjects’ clinical judgment capability. Even if the novice counselors could remember more about the client after reviewing the provided notes, it did not follow that they benefited from reviewing complete notes to make more accurate clinical judgments.

Neither note-taking nor reviewing personal notes afterward enhanced novice counselors’ clinical judgment. In addition, subjects who took notes did not outperform those who refrained from taking notes or who simply read complete notes. The results are consistent with the studies of Schuh (1978) and Middendorf and Macan (2002). In both studies, the researchers found that note-taking had no significant effects on employment interviewers’ judgments about applicants’ overall suitability. Although the studies found benefits of note-taking on listening accuracy, those advantages did not lead to accuracy in judgments.

However, the current results are inconsistent with the study of Kiewra et al. (1991), which found subjects who took and reviewed their notes and subjects who borrowed notes both scored significantly higher on synthesis assessments than those who simply took but did not review notes. This inconsistency may imply that making clinical judgments does not require remembering details but performing on synthesis tests does.
Therefore, in academic settings, the effects of note-taking on recall and synthesis tests were similar (Kiewra et al., 1991). However, note-taking has a different impact on recall and judgment in non-academic settings (e.g. Middendorf & Macan, 2002 and current study).

Clinical judgment about a client requires counselors to generate meanings from facts. It appears that generative processes occur evenly across the note-taking situations in this study because the current results indicate that no differences in judgments occurred between reviewing notes, no note-taking, and note-taking conditions. Interpretation of this finding is two sided; on the one hand, the findings do not lend support to the practice of note-taking during counseling as a method to improve the accuracy of clinical judgments about clients. On the other hand, it appears that reviewing complete notes without interacting with a real client can still lead to accurate judgment, which is an important validation of the process used by many professionals who make judgments based solely on case reviews. While only reviewing provided notes does not provide opportunities to observe non-verbal behaviors, it filters out unnecessary information and decreases the number of irrelevant words (Carter & Van Matre, 1975). Thus, the generative process and encoding become facilitative as a result of studying notes previously taken (Kiewra et al., 1991).

Prior research (Kiewra et al., 1991) suggests that generative activities are more likely to occur during notes review (personal notes or provided notes) than during lecture learning because attention resources are not divided. However, for the counselors-in-training who were the subjects of this study, it is suspected that most generative processing happened in the process of listening to the client or reviewing complete case notes. As soon as participants heard or read facts about the client, they started to generate the meaning of the information, regardless of the presence or absence of notes. Subjects’ clinical judgment is a more essential ability that is related to their scope of practice. This may explain the insignificant results of making clinical judgments among the four.
interventions. Thus, taking notes in sessions plays little role in enhancing generative process and thus does not help clinical judgment. Counselors’ essential function will not be easily impacted by other factors, such as note-taking.

As early as 1912, Freud expressed concern that taking notes in psychoanalysis session would impede the therapeutic process because notes would highlight some details and produce expectations of what will be found (as cited in Levine, 2007). According to Freud, note-taking during psychoanalysis may direct clinicians to fragmented information and a loss of the meaning of story as a whole. The results of the present study to some extent dispute Freud’s hypothesis. Counselors’ understanding about the client is not disintegrated by taking notes in the session. They can still make accurate clinical judgments.

In sum, it was expected that note-taking would be beneficial to clinical judgment because of the increased attention, more elaborative processing of specific ideas and greater organization of material (Kiewra, 1989). The current results suggest that none of the above processes actually applies to these novice counselors’ note-taking and suggests that note-taking may have a limited effect on clinical judgment of counselors-in-training. When counselors write words down during a session, it does not guarantee that they process and manage the information more effectively.

Yet, there are two concerns regarding the result of clinical judgment. The first is related to the research design. Subjects completed the recall tests before they did the clinical judgment assessment. In the recall evaluation, subjects were encouraged to provide as much information as possible about the client. Thus, it is likely that subjects organized and generated meaning about the client in the process of writing down the case information. The act of recalling the case facts and putting them in their own words served as a chance to “encode” the information. In fact, they were converting information they heard from the client into a document in the recall evaluation. In the recall evaluation, they were probably organizing what they learned about the client. As a result,
the differences in clinical judgment across the four situations might be diminished and caused the insignificant results regarding their clinical judgment. Second, subjects in the current study are in the middle of their professional preparation, and their capability in making clinical judgments is not yet stabilized. One may suspect that subjects’ similar performance across note-taking situations is due to their unstable professional performance. Therefore, this study also examines the effect of note-taking on counselors’ general judgment, which is not related to their clinical capability.

**General Judgment**

General judgment was selected as another outcome evaluation because this task does not require clinical expertise. General judgment is simply related to a person’s impression or perception about the other person. Thus, the effect of note-taking on general judgment can prevent potential bias resulting from novice counselors’ limited clinical experiences. This evaluation did not require subjects to comprehend the facts about the client. In contrast with the insignificant effect of note-taking on subjects’ clinical judgment, subjects’ general judgment about the client showed variances across the note-taking conditions. The result indicated that the perceptions developed by the taking notes and no note-taking conditions were different for client Case B and Case C.

Moreover, in either taking notes or non-note-taking sessions, subjects had a chance to interact with the real client. However, subjects never had a chance to observe or interact with the real client in review notes only sessions. Thus, it was assumed that counselors should have similar impressions about the client in taking notes and non-taking notes situations because they both interacted with the client. These two conditions are also expected to have the same relationship with the reviewing notes only condition, whether both were related or both were not related.

However, when compared with the review notes session, the note-taking session and the non-note-taking session exhibited different patterns. For Case B and Case C, subjects who reviewed provided notes developed similar impressions as the subjects who
took notes with and without review, but they had different impressions than the subjects who refrained from taking notes. This situation was opposite for Case A. In these three cases, the note-taking and the non-note-taking conditions demonstrated a different relationship with the only reviewing notes condition.

Therefore, it is suspected that there is a tendency that counselors have different general judgments about the client when they take notes, as compared to sessions when they do not take notes. Certain factors as a result of note-taking might impact counselors’ judgment. However, we do not know the details about this influence on general judgment. What we do know is that counselors see the client differently when they interact with the client without paying attention to taking notes. The difference in general judgment could result from more detailed observation of and undistracted attention to the client because they do not direct their eye contact to their notes. They are more engaged in interacting with the client while refraining from taking notes.

In conclusion, counselors make judgments about the client by managing information. While interacting with the client, counselors are deciding what is important about the client in order to make valid judgments. Whether counselors take notes in the session, the process of evaluation continues to happen. This study examines if note-taking makes a difference in the activity of managing information and affects counselors’ judgment. Although the current study does not find evidence that note-taking impacts counselors’ clinical judgment, we cannot exclude the possibility that note-taking impacts how novice counselors process client information in the session because of the dissimilar effects of note-taking on subjects’ general judgment. However, the limited clinical training of subjects, and the possible impact of evaluation order on outcomes make it difficult to accurately describe the impact.

**Types of Notes: Organization vs. Content**

The type of notes that counselors wrote during the session may reflect their cognitive level while taking notes (Bohay, Blakely, Tamplin, & Radvansky, 2011). The
descriptive analysis of participants’ notes showed that subjects used very simple strategies in organizing their notes in the session. Some notes were taken based on time sequence and some were based on key words. Even if participants used bullets in their notes, those notes still reflected a very rough organization. The lack of organization in the notes reflects that information is not well-manipulated by the subjects while taking notes.

In addition, the content of the notes showed that most words in the notes were verbatim quotes from the analogue client. Stefanou, Hoffman, and Vielee (2008) found that the amount of directly copied information was a negative predictor on factual recall questions while the proportion of additional words in the notes from the source material was a significant positive predictor of high application quiz scores. In the current study, the notes taken by the subjects only contained a direct copy of interview information, which could explain the relatively low recall score for the note-taking condition. The lack of additional words in the notes could correlate with the insignificant performance on clinical judgment for counselors who took notes. Note-taking is not helpful to counselors’ recall and clinical judgment if counselors take notes by recording what they have heard for the purpose of taking notes, rather than for the purpose of engaging with and understanding the information.

Moreover, there was a lack of quantity in subjects’ notes. Piolate, Olive, and Kellogg (2005) proposed that note-taking facilitates learning by repeatedly exposing subjects to content. The low number of words in the notes makes exposure to the notes less beneficial because there is a lack of content to review. Based on the analysis of subjects’ notes, it is suspected that subjects did not spend much cognitive effort on writing notes. As a result, it is less likely for the functions and the benefits of note-taking to occur, which can be confirmed by the insignificant benefits on recall and clinical judgment in the note-taking situation.
Note-taking in Counseling

The current analysis shows that note-taking has some similar and different effects in the counseling setting and in academia. Novice counselors’ recall and clinical judgment were not improved by the act of note-taking or personal notes review. What makes note-taking in counseling different from note-taking in academia is that counseling is a unique context. Counselors’ note-taking behaviors can be more complicated than note-taking in other settings.

Factors that could be involved in counselors' note-taking have been explained by a hypothetical model in Chapter One (see Figure I). Prior studies showed that note-taking in counseling sessions could impact the clients’ willingness to use the services (Miller, 1992), as well as clients’ perception of counselors’ effectiveness, clients’ reaction to the session, and overall therapeutic impact on the client (Hickling, Hickling, Sison, & Radetsky, 1984). This study further assumes that counselors’ note-taking is related to counselors’ interview recall, clinical judgment, and demonstration of counseling skills, which could lead to the accuracy of case documentation and counselors’ competency in providing treatment.

However, the current study does not find a significant relationship between novice counselors’ note-taking in sessions and their ability to recall and make clinical judgments, especially when they do not take complete notes. As a result, it is important for counselors-in-training to deliberate before they take notes during the session. If common note-taking is not helping counselors-in-training, maybe they should not take notes when interacting with clients. They will risk creating negative perceptions in clients (Hickling, Hickling, Sison, & Radetsky, 1984) by involving an ineffective strategy (i.e. note-taking) to enhance their recall or judgment capability.

On the other hand, the current result also implies that utilizing complete and organized notes can be beneficial to recall. Thus, counselors and counselors-in-training should make decisions about note-taking by considering if they will be able to create
complete notes. However, if counselors cannot write detailed notes in the session due to a lack of note-taking training or the demands on working memory and transcription speed, they probably should consider refrain from taking notes because they can perform as well as when they review provided notes.

Moreover, while the performance on clinical judgment is similar across note-taking, no note-taking, and reviewing notes conditions in this study, the results cannot exclude the possible impact of note-taking on judgment. Because the evidence found in this study did not demonstrate the directionality of this impact on judgments, we do not know whether note-taking enhances or limits novice counselors’ judgments. Therefore, if counselors-in-training intend to improve their judgment, note-taking would not be the strategy they can benefit from, before further evidence is found.

Overall, counselors’ note-taking in the session is a tradeoff between intensive cognitive resources and better recall or performance. Counselors need to ensure this tradeoff is worthwhile and effective by creating useful notes. In the meantime, counselors do not want to sacrifice the perception they may create in the client and the attention they could have paid if they did not take notes in front of the client. By carefully considering all factors in this model (Figure I), note-taking will become an action that facilitates the therapeutic alliance.

**Implications for Counselors and Counselor Educators**

This study finds that the complexity of notes may affect their usefulness. As notes reviewers read complete notes, they can recall and make clinical judgments that are as accurate as if they had interacted with the client. Supervisors and other clinicians may be able to capture a case by reading complete notes. Thus, if counselors are to make useful notes, they should be trained to record the case comprehensively and accurately.

However, the current study also shows that note-taking in session may be less useful to novice counselors with regard to clinical judgment or recall accuracy. Counselors-in-training tend to take verbatim notes without good organization and enough
details. Consequently, they are not able to utilize the benefits of note-taking. When counselors are not equipped with note-taking strategies to create complete and accurate notes, it is not possible for note-taking to be beneficial to counseling. Thus, it is not suggested for novice counselors to take spontaneous notes in sessions.

In contrast with just taking verbatim notes, it is worthwhile to discover strategies that will help counselors to quickly build a structure in their notes. Just like instructors often use handouts or Powerpoint slides to arrange the content and reduce the burden of students’ note-taking (Stefanou, Hoffman, Vielee, 2008), counseling educators should consider developing a useful notes format to enhance the quantity and quality of note-taking. Counselors-in-training may need to have some aids to scaffold the information and to create notes. For example, providing a pre-determined structure would be one strategy to ease the load on working memory. Inserting a few pre-established key words, such as demographics, chief complaints, social connections, or crisis events, as the guidelines of notes may be of help. Novice counselors will know how to use the notes as a structure to integrate pieces of information into the perception of the client as a whole.

Note-taking often happens under severe time pressures (Piloate, Olive, & Kellogg, 2005). As a result, transcription fluency is a predictor of quality notes (Peverly et al., 2007). It also requires great capacity of working memory to switch between writing and listening. Taking electronic notes (i.e. typing) is a way to increase transcription speed. With this assistance in transcription fluency and working memory, counselors may better manage the cognitive efforts between counseling and note-taking.

Writing case notes has been rated as the third greatest job task in the rehabilitation counseling practice (Leahy, Chan, & Saunders, 2003). Thus, it is worthwhile to develop note-taking strategies in counseling that can enhance the efficiency and effectiveness of writing case notes. Note-taking strategies may help novice counselors to organize and record information in the session, which can improve the efficiency of documentation and prevent the effect of forgetting.
Implications for Future Research

The current study confirms the importance of complete notes for the counseling setting and reveals that immature note-taking strategies are utilized by many novice counselors. Therefore, it is important to develop an understanding of methods that counselors can use to create complete notes. Future studies can explore the organization or formats of notes that will help counselors, especially new counselors who are vulnerable to using underdeveloped note-taking strategies (i.e. only copying a few verbatim words), to create complete notes in the session. Furthermore, it is worth examining whether providing a note structure or note-taking training will enhance the benefits of note-taking, reduce the load of working memory involved in note-taking, and decrease the modest effect of encoding resulting from the lower writing speed and rapid information.

The present study examined the effects of note-taking right after the interview occurred. Yet, counselors in the real world often see several clients back-to-back and they are not always able to document the case immediately following the session. Therefore, arranging activities prior to recall evaluation may require the subject to retrieve more information from long term memory encoding, as compared with the immediate recall and judgment tasks of the present study that may have relied on short term memory encoding. The delay, combined with competing activities, may mediate the relationship between notes, recall, and judgments.

Based on the model presented in Figure I, whether counselors’ counseling skills are influenced by note-taking is a missing piece in that model. The relationship between note-taking and demonstration of counseling skills will provide clinical implications to counseling practice as well. However, the evaluation of counseling skills may require hiring many experienced counselors as raters.

Last, there is a need to replicate the study with experienced counselors and experienced note-takers and examine the effect of note-taking on their clinical ability.
The present results suggest that educators should not rely on note-taking to improve the recall and judgments of counselors-in-training. It is unclear if similar advice should be given to supervisors of experienced counselors who demonstrate clinical errors.

**Limitations of the Study**

Participants of the study limit the findings to novice counselors who take few notes in sessions. A limit to interpreting the results is that the novice counselors who were the subjects of the study may not have had the clinical experience to attend to relevant clinical information or the skill to take extensive notes while conducting an interview. Participants were not encouraged to take notes as much as possible and many subjects did not take many notes in the session. Accordingly, the effect of taking notes may not be very obvious. When participants did not take many notes, it followed that they did not spend much time reviewing their own notes. This limits the interpretation of the similarity found between the *taking notes/no review* and the *taking notes with review* conditions.

The effects of short-term memory limit the interpretation of the results. Participants do not wait a long period of time to recall or make judgments. They can rely on their short term memory, not the notes, to recall the interview. Therefore, this study can only explain the effect of note-taking on original learning about the client, not the retention of the information. The study results demonstrate the subjects’ early processing about the client. Because there is no measurement of the delay recall, whether the effects of note-taking will be different for delayed measurement is uncertain. However, this study result is somewhat consistent with Knight and McKelvie’s (1986) study, which utilized delay evaluations. Because of the above limitations, the current study results will be more applicable to novice counselors who are able to take notes after the session.

Randomization limits the interpretations of the results. The study design did not include randomization of the order of three evaluations and may to some extent diminish the impact on clinical judgment. Always completing recall evaluations before providing
judgments offers subjects a chance to organize their thoughts in their process of recall. Thus, the result on clinical judgment requires references from other evidence and further investigation in subsequent studies.

The possible biases from the provided notes limit the interpretation of reviewing complete notes. When subjects receive the notes from the researcher, they might perceive the notes with high credibility and thus pay more attention on examining it. This may improve recall when subjects review complete notes.

Conclusions

This study examines the effect of counselors’ note-taking across four situations: refraining from taking notes in the session, taking notes in the session, taking notes and reviewing their own notes afterward, and only reviewing the provided notes. By comparing counselors’ performance on recall and judgment in the above four situations, this study explores the relationship between functions of note-taking (i.e. external storage and encoding) and counselors’ performance.

The benefits of complete notes on recall are first identified in this study. Reviewing complete notes is useful for counselors to encode and recall information. Complete notes can also give readers effective information for making judgments even without interacting with the client. On the contrary, when counselors take unorganized and incomplete notes, note-taking by itself or with notes review is no longer helpful. Novice counselors do not encode information while note-taking; neither do they recall interviews better by reviewing personal notes. The note-taking functions of encoding and storage are not exhibited in novice counselors’ note-taking. Thus, counselors’ performance is not enhanced by taking notes.

Moreover, similar performance on counselors’ clinical judgment across the four situations shows that novice counselors focus on understanding the client, even with the additional task of note-taking. On the one hand, the result indicates that counselors spend most effort on listening to the client, not writing notes. On the other hand, the result
implies that counselors’ note-taking becomes a copying action without processing the content. During this multi-task work (i.e. taking notes within a counseling session), counselors-in-training choose to direct their attention to interacting with the client, and develop a simple and rough way of taking notes, which makes their note-taking not beneficial to recall or clinical judgment.

The finding also implies the difficulties for counselors who take notes and provide counseling at the same time. The efforts of writing notes, listening to rapid information, and demonstrating counseling skills create barriers for counselors to utilize the functions of note-taking. Without any assistance on taking notes, counselors just copy what they hear from the client without advanced organization. Therefore, it is concluded that novice counselors cannot benefit from rough note-taking to improve their recall and clinical judgment. In fact, when novice counselors do not take notes in the session, they can perform as well as when they take notes or when they only review complete notes. Thus, if counselors are not equipped with skills to create complete notes, it is suggested that they refrain from taking notes in the session. They can be equally competent in performing recall and clinical judgment.

Furthermore, the qualitative results show that counselors are trying to group similar information in the notes but fail to utilize a mature structure to do so. Counselors have the tendency to organize their understanding about the client into a simple structure. However, novice counselors are not able to achieve it in their notes. It is suggested that counselors may benefit from taking notes if they are provided with a strategy to quickly formulate a structure in their notes.

Importantly, this study finds some evidence showing that counselors process clients’ information differently when they do or do not take notes. Thus, further evidence is required to confirm whether counselors’ judgments can be impacted by the action of note-taking.
In sum, this study is the first attempt among note-taking studies to examine counselors’ note-taking behavior. Even if note-taking helps people in academic and other non-academic settings, it does not follow note-taking benefits counselors as well. Thus, this study intends to bring attention to the effectiveness of counselors’ note-taking. When counselors choose to take (or not to take) notes, they will make the decision based on its value to themselves, to the client, and to the therapeutic alliance.
APPENDIX A

CASE INFORMATION

Case A

Mr. Tom Smith, age 19, Caucasian, was born in a small town. Tom grew up on a farm. His father is a farmer. He has an older brother, who barely graduated from high school and became a farmer like his father. Tom’s father is very proud of him being a college student because Tom is the first person who has gone to college in his family. At present he is a freshman in the College of Agriculture enrolled in a pre-veterinary medicine curriculum. He has wanted to be a vet for a long time. His interest in becoming a vet stems from his background and experience on the farm.

He came to counseling because of his lack of academic success in math. He has test anxiety in math. He indicated his nervousness on math tests to the counselor. Tom has failed two tests in this semester and was very depressed and upset about his math grades. He is able to complete the non-test assignments by himself or by TA’s help. However, when he sits down in the math test, he always feels that he is not able to solve the math questions. He feels so stressed that he cannot focus on the test. His poor grades on math panic him. He is also afraid that he will disappoint his father if he cannot pass the test and fails in this program.

Currently, he spends about 3 hours per week studying math. He is doing fine with all other subjects. He doesn’t experience test anxiety in other subjects. He has not had test anxiety before. He did fine in math in high school. He has not talked about his anxiety with anyone else.
Case B

Mrs. White, Caucasian, 39 years old, had a marital problem. Her husband had come home late two nights earlier, very drunk. He resented her questioning and beaten her up. The two children, ages five and seven, who were sleeping, woke up crying and frightened. When he fell asleep, she managed to bundle them up and take them to the home of her uncle, who had always been kind and understanding. Earlier in the day her husband had contacted her and offered to see a psychiatrist if only she would return home. In fact, he had already made an appointment to see a psychiatrist the following morning at nine o’clock, and told her she was expected to attend as well. Mrs. White became quite agitated. She was angry that her husband tried to control her and told her what to do. She wanted to know what she should do.

Since his call, she had been turning it over for hours, trying to figure it out. If her husband would really undertake treatment, should she not agree to go home and encourage this? She didn’t want her not being supportive to cause her husband’s failure in staying sober. She still loved her husband and really hoped he would quit drinking. However, she also felt like staying away from him as long as possible to stay safe. On the other hand, she did not want to discourage his efforts to do something constructive. She was afraid that he would not complete the treatment by himself. She felt she had some responsibility for him.

Her husband had been to a psychiatrist on and off over the years, but he had never stayed in treatment more than a few weeks. His drinking pattern had persisted over the nine years of their marriage.

This was the first time she had ever picked up like this and left him. The repeated exposures of her children to his behavior were more than she could stand. She felt sorry for her husband but wondered whether she had the strength to stay married with him. She hopes her husband can stay sober and then she will come home. She had never received marriage or other types of counseling.
Case C

Andy, Caucasian, age 17, has never received mental health services before. Recently, Andy has been referred to a counselor in private practice because of changes to his behavior. Andy is uncharacteristically irritable with his parents. In addition, Andy is withdrawn from many activities. For example, he has been an average student, but his grades have recently fallen. He has also given away some of his prized possessions, including a baseball that was very valuable to him because he caught it in the stands at a major league game. His parents don’t understand his behavior and are concerned about him. They tell the counselor that Andy is given to expressions of hopelessness and anger. His parents connect these feelings with the fact that his girlfriend recently dumped him in favor of a more popular student at school.

Andy says that he feels that his parents are disappointed in him. The disappointment makes him sad. He just feels that he is fed up and is very angry that his girlfriend dumped him. He says that she will be sorry when it becomes impossible for her to get back with him, adding that soon he will be free of all this agony. Andy says that he always gets upset when he can’t get his way, and that if people don’t like him he finds little ways to get even. He then feels overwhelmed with guilt over his reactions. The way he chooses to deal with the guilt, hurt, and ubiquitous pain is to get high with a few friends. He adds that his parents are unaware of his drug use, which he denies is a problem.

He says that one of his friends killed himself last year and he has thought a lot about joining this friend. A year ago, Andy took a razor and cut his arm. But he got scared when he saw the blood and he stopped. That was the only time he has tried to hurt himself. He has never talked with anyone else about killing or hurting himself. He is thinking he would drive his car into a busy intersection at 4 pm on Route 12 when the 18-wheelers are out on the road. It would be quick and look like an accident. He has had this plan of committing suicide for about a year.
APPENDIX B
THE FIFTEEN FACTS FOR RECALL

Case A

1) Mr. Tom Smith, 2) age 19, 3) Caucasian, was born in a small town. Tom 4) grew up on a farm. 5) His father is a farmer. He has an older brother, who barely graduated from high school and 5) became a farmer like his father. Tom’s father is very proud of him being a college student because Tom is 6) the first person who has gone to college in his family. At present he is a 7) freshman in the College of Agriculture enrolled 8) in a pre-veterinary medicine curriculum. He has 9) wanted to be a vet for a long time. His interest in becoming a vet stems from his background and experience on the farm.

He came to counseling because of his lack of academic success in 10) math. He has 11) test anxiety in math. He indicated his nervousness on math tests to the counselor. Tom 12) has failed two tests in this semester and was very depressed and upset about his math grades. He is able to complete the non-test assignments by himself or by TA’s help. However, when he sits down in the math test, he always feels that he is not able to solve the math questions. He feels so stressed that he cannot focus on the test. His poor grades on math panic him. He is also afraid that he will disappoint his father if he cannot pass the test and fails in this program.

Currently, he spends about 3 hours per week studying math. He is doing fine with all other subjects. 13) He doesn’t experience test anxiety in other subjects. He has not had test anxiety before. 14) He did fine in math in high school. 15) He has not talked about his anxiety with anyone else.
Case B

1) Mrs. White, 2) Caucasian, 3) 39 years old, had a 4) marital problem. Her husband had come home late two nights earlier, very drunk. He resented her questioning and 5) beaten her up. 6) The two children, ages five and seven, who were sleeping, woke up crying and frightened. When he fell asleep, 7) she managed to bundle them up and take them to the home of her uncle, who had always been kind and understanding. Earlier in the day her husband had contacted her and 8) offered to see a psychiatrist if only she would return home. In fact, he had already made an appointment to see a psychiatrist the following morning at nine o’clock, and told her she was expected to attend as well. Mrs. White became quite 9) agitated. She was angry that her husband tried to control her and told her what to do. She wanted to know what she should do.

Since his call, she had been turning it over for hours, trying to figure it out. If her husband would really undertake treatment, should she not agree to go home and encourage this? She didn’t want her not being supportive to cause her husband’s failure in staying sober. She still loved her husband and really hoped he would quit drinking. However, 10) she also felt like staying away from him as long as possible to stay safe. On the other hand, she did not want to discourage his efforts to do something constructive. She was afraid that he would not complete the treatment by himself. 11) She felt she had some responsibility for him.

12) Her husband had been to a psychiatrist on and off over the years, but he had never stayed in treatment more than a few weeks. 13) His drinking pattern had persisted over the 14) nine years of their marriage.

This was the first time she had ever picked up like this and left him. The repeated exposures of her children to his behavior were more than she could stand. She felt sorry for her husband but wondered whether she had the strength to stay married with him. She hopes her husband can stay sober and then she will come home. 15) She had never received marriage or other types of counseling.

Case C

1) Andy, 2) Caucasian, 3) age 17, 4) has never received mental health services before. Recently, Andy has been referred to a counselor in private practice because of changes to his behavior. Andy is uncharacteristically 5) irritable with his parents. In addition, Andy is withdrawn from many activities. For example, he has been an average student, but 6) his grades have recently fallen. He has also 7) given away some of his prized possessions, including a baseball that was very valuable to him because he caught it in the stands at a major league game. His parents don’t understand his behavior and are concerned about him. They tell the counselor that Andy is given to expressions of hopelessness and anger. His parents connect these feelings with the fact that 8) his girlfriend recently dumped him in favor of a more popular student at school.

Andy says that he feels that 9) his parents are disappointed in him. The disappointment makes him sad. He just feels that he is fed up and is very angry that his girlfriend dumped him. He says that she will be sorry when it becomes impossible for her to get back with him, adding that soon he will be free of all this agony. Andy says that he always gets upset when he can’t get his way, and that if people don’t like him he finds little ways to get even. He then feels overwhelmed with guilt over his reactions. The way he chooses to deal with the guilt, hurt, and ubiquitous 10) pain is to get high with a few friends. He adds that his parents are unaware of 11) his drug use, which he denies is a problem.

He says that 12) one of his friends killed himself last year and he has thought a lot about joining this friend. A year ago, 13) Andy took a razor and cut his arm. But he got scared when he saw the blood and he stopped. That was the only time he has tried to hurt himself. He has never talked with anyone else about killing or hurting himself. 14) He is thinking he would drive his car into a busy intersection at 4 pm on Route 12 when the 18-wheeler are out on the road. It would be quick and look like an accident. He has had this plan of committing suicide for about 15) a year.

APPENDIX C

EVALUATION FORMS

Evaluation form (1)

Counselor’s name_________________
Client’s name___________________

- Please list some important facts that relevant to your client and his/her problem in this session. Write down as many facts as you can remember. If one page is not enough, you can use the other side. Note. Please list facts, not your feelings or conjectures.

____________________________________  ______________________________________
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Please list some important facts that relevant to your client and his/her problem in this session. Write down as many facts as you can remember. If one page is not enough, you can use the other side. Note. Please list facts, not your feelings or conjectures.
Evaluation form (2)

Counselor’s name__________________

Client’s name__________________

• Please rate the problem your client is presenting using the following eight items. Please circle one number on the continuum.

1. To what degree is the client’s problem caused by factors which he or she could potentially control?
   - totally controllable (1)   (2)    (3)   (4)   (5)   (6)   (7) not at all controllable

2. To what degree do you feel the problem is caused by internal versus external factors to the client?
   - internal (1)     (2)    (3)    (4)    (5)    (6)    (7) external

3. To what degree do you feel the problem is caused by factors which are enduring versus transient?
   - enduring (1)    (2)    (3)    (4)    (5)    (6)    (7) transient

4. To what degree is the problem caused by factors specific to the situation versus factors which are pervasive across situation?
   - specific (1)    (2)     (3)     (4)     (5)     (6)    (7) pervasive

5. What is your first treatment choice for the client after this interview?
   i. no treatment
   ii. brief counseling (1-3 sessions)
   iii. short-term counseling (4-10) sessions
   iv. long-term counseling (10 or more sessions)

6. Please rate the severity of the problem your client is presenting.
   - mild  (1)   (2)    (3)   (4)   (5)  crisis

7. Please rate the duration of the problem.
   - (1) short term
   - (2) long term

8. Please rate treatment urgency of your client.
   - stable at present (1)   (2)    (3)   (4)   (5)   (6) crisis
Evaluation form (3)

Counselor’s name__________________

Client’s name__________________

Think of the client with whom you just worked. Rate this client on the following scales. You make only ONE mark for each pair of words on each line. Place your check marks in the middle of spaces, not on the boundaries. By making a checkmark along the line, you can indicate how you describe this particular client.

For example,  X _____ : _____ : _____ : _____ : _____ : _____ : _____   Y
(1)            (2)         (3)            (4)            (5)        (6)           (7)
(1) extremely X, (2) quite X, (3) slightly X, (4) neither X nor Y, equally X and Y, (5) slightly Y, (6) quite Y, (7) extremely Y

It is your true impressions that we want. Do not worry or puzzle over the individual items.

   (1)           (2)           (3)          (4)          (5)          (6)           (7)

   (1)           (2)           (3)          (4)          (5)          (6)           (7)

   (1)          (2)           (3)          (4)           (5)          (6)          (7)

   (1)           (2)           (3)          (4)           (5)          (6)          (7)

   (1)           (2)           (3)          (4)           (5)          (6)           (7)

   (1)           (2)           (3)          (4)           (5)          (6)           (7)

   (1)           (2)           (3)          (4)           (5)          (6)           (7)

   (1)           (2)           (3)          (4)           (5)          (6)           (7)

   (1)           (2)           (3)          (4)           (5)          (6)           (7)
APPENDIX D
SAMPLE NOTES

“Verbatim” Notes

Therapists' anxiety
Math I failed test thought
A disappointed in math-insecurity
If they solve
19 freshmen = never before
Other courses fine
Growing up at farm [unreadable],
Labelling is weak
Previously no cow
Farmers helping out, enjoying, never moved
Never got distant farther, helping past
Escaped, never said
Veterinary / c-section
If I don't pass I feel pressure
“Key Points” Notes

Andy, 17 year old

Parents say angry, hostile, irritable

1.5 yr ago relationship ended

- Haven’t shared - Pain
- Stopped caring - Give away things, enjoyed sports mom.
- Inattention - Grades down - Don’t know how to feel

6 mo month found committed suicide

- Smoked pot, cutting, 1 gram / gm

Coping skills

Yes on suicide 2 yr

- Quick, painless
- Vehicle accident

Want to be happy

- Social rituals
- Sports

Safety plan - dad

Dad’s support

- Inconsistent
- Close
- Aware

Not mom
"Key Points" Notes

Intake Session:  
Presenting Problem: Husband’s drinking and physical abuse.  
Psychiatrist: Doesn’t feel safe.  

- Treatment for sobriety  
- Bruises  
- Control her.  
- Drinking  
- Stay at home mom  
- Child support  
- Hopes husband would stop drinking, no relapse.

Client: Mrs. White  
39 married years  

Impact on children worried about relationship with father.  
Angry at husband’s request.  
Has done it in past.  
Uncle: understanding open, supportive.
APPENDIX E
IRB APPROVAL

IRB ID #: 201207753
To: Chu-Ling Lo
From: IRB-02 DHHS Registration # IRB00000100, Univ of Iowa, DHHS Federalwide Assurance # FWA00003007
Re: The Impact of Note-taking in Counseling

Approval Date: 09/21/12
Next IRB Approval Due Before: 09/06/13

Type of Application: 
☐ New Project
☐ Continuing Review
☒ Modification
Fetuses, Neonates

Type of Application Review: 
☐ Full Board:
Meeting Date:
☒ Expedited

Approved for Populations: 
☐ Children
☐ Prisoners
☐ Pregnant Women,
☐ Exempt

Source of Support:

This approval has been electronically signed by IRB Chair:

Janet Karen Williams, PHD

09/21/12 1427
REFERENCES


Friedman, E., Sainte, M., & Fallar, R. (2010). Taking note of the perceived value and impact of medical student chart documentation on education and patient care. *Academic Medicine, 85*(9), 1440-1444. doi: 10.1097/ACM.0b013e3181eac1e0


