

當諮商遇到 AI：談在人工智慧素養和諮商素養之架橋工作

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摘要

人工智慧時代的來臨，其技術和產品在人類社會中變得普及，形成新的世界。當人性化的諮商遇上機械式的人工智慧，首先要做的就是探討這兩個領域對於「素養」內涵的指稱是什麼，以及如何形成知識、能力和態度這三個面向的概念。基於相關研究文獻的缺乏，本文對跨學科概念性探究的討論，主要分為「人工智慧意涵」、「人工智慧素養意涵」、「諮商意涵」和「諮商素養意涵」四類，希望對此議題有初步的理解和貢獻。

人工智慧素養分為三個面向：人工智慧知識、人工智慧技能、人工智慧態度，核心概念是學習和掌握數位素養，以達到交流與溝通的目的。諮商素養涵蓋諮商知識、諮商能力及諮商態度三個面向，核心概念強調諮商是人與人的互動關係，掌握諮商技能以展現專業能力，發展諮商的評估素養。

根據對人工智慧素養與諮商素養彌合差距的概念性初探，初步形成人工智慧諮商素養的三個面向，即人工智慧諮商文化知覺、人工智慧諮商溝通能力、人工智慧諮商批判態度。本文將人工智慧諮商素養界定為在諮商過程展現數位素養及評估素養，保持對文化和科技的知覺，對數據及評估結果持批判態度，達到跨領域的理解與合作，幫助解決人類的的生活問題。最後，本文基於人工智慧素養與諮商素養彌合差距的探究進行反思，以期可以帶來更多相關議題的討論，並成為後續相關研究的參考。

關鍵詞：人工智慧、人工智慧素養、諮商素養、人工智慧諮商素養

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壹、緒論

電腦科學起步於 1950 年代，在諮商領域而言，過去文獻亦有對處於電腦時代的諮商工作者，應具備的電腦能力（computer competence）做出探究，強調諮商師應具備使用電腦應用程序的五種能力，即文字處理、電子表格、數據庫管理、電腦桌面出版和資料通訊的電腦能力，並提出電腦能力理應納入輔導系課程（Timothy, 1988）。為因應新冠肺炎疫情，各界開始以線上方式做出應對。諮商領域的教學，也在相關措施下開始以線上視訊方式進行課程、研討會、個別諮商或團體諮商，發現可使用的線上視訊會議的應用程式相當多元與方便，全然迥異於早期電腦科技時代，僅可採文字或語音交流的方式。人工智慧的諮商方式，在疫情時代突破了空間的距離，開啟諮商師與個案之間嶄新的交流及互動方式。同時在疫情當下，現代人心理困擾倍增，愈來愈多的人尋求心理諮商的協助，諮商領域如何善用人工智慧的科技，以作出適時因應，為諮商領域迎來人工智慧新世界的挑戰，與時並進是必然趨勢。

在專業諮商與輔導教育的領域中，林巧莉與謝麗紅（2021）首對人工智慧時代將為輔導與諮商教育帶來衝擊，進行探討及反思。是故引起筆者思考關於作為諮商師在人工智慧素養上，所展現的諮商素養為何？然而在思考此議題之際，首先應探究「諮商素養」為何？以及「人工智慧素養」為何？筆者針對相關文獻做出搜尋與回顧，發現不論是人工智慧素養概念，或是諮商素養概念，可獲取的文獻數量不多，不同領域對「素養」也有各自的定義，顯示「素養」概念仍然處於探究的狀態。據此之故，筆者萌生為「人工智慧素養」與「諮商素養」，作出「人工智慧諮商素養」跨領域彌合差距的架橋之概念性初探。本文將彌合差距的架橋（bridge a gap）界定為：「在人工智慧與諮商之間，覺察二者各自專業領域有其相同及差異的概念，作出連接或縮小二者之間的差異，以加強諮商領域的人工智慧素養，因應人工智慧時代的諮商需求。」基於以上在諮商實務工作的思考，我們提出了對人工智慧諮商素養的意涵探究，以作為諮商領域在人工智慧時代未來發展的參考。

貳、素養的意涵

聯合國教育、科學及文化組織（United Nations Educational, Scientific and Cultural Organization, UNESCO, 2004）初始將「素養」（literacy）理解為一組閱讀、書寫和計算的技能，是一個人能夠理解自己所閱讀的，並有書寫能力，可簡單陳述關於自己的生活日常。在「素養」意涵的拓展上，進一步提出「素養」不僅是個人實現與社會生活的連結，更是受到文化、歷史、語言、宗教和社會經濟條件的影響，強調「素養」不是統一的概念，而是深受文化和語言的影響，可以透過視覺化和數位化，使人們可以通過各種

媒體進行交流及表達，同時也是一種持續的學習歷程，用以發展個人所學和潛力，實現個人目標，投入社區及社會生活，可見「素養」擁有更為多面向的意涵，甚至在時間性的發展過程，動態化呈現多樣化的意義面向，也可以被理解為是社會構建下，溝通關係所形成的模式。

國內對於「素養」意涵的探討，主要指涉到二個英文用字，一為 literacy，二為 competence，一般皆譯為「素養」，然而英文的 competence、literacy 與中文的能力、素養，存在著翻譯上的模糊性，且造成了中、英文對應與指涉關係之間的混亂，顯示了各領域在談關於「素養」，卻是在各自領域的脈絡或思維下進行解讀，以致其意涵各有差異（楊俊鴻，2018）。蔡清田（2011）曾就學界對「素養」、「能力」、「知能」、「literacy」及「competency」在概念理解上的差異性加以釐清，強調「素養」可以彌補「知能」的不足，但徒有「知能」卻造成「素養」的缺憾，以此說明「素養」非僅是指稱知識及能力，而應有更寬廣的內涵所指。楊俊鴻（2018）指出國內學者認為「素」，有一般的、平常的意思，而「養」有涵養、修養的意思，合指為「每一個人都應具備的涵養」，與英文 literacy 一詞狹義所指的讀寫能力，或廣義的意義包括一個人的受教情況以及一般的技能之意，在意義上仍存有明顯的差距。

據有關「素養」在中英詞彙運用及其中意涵的討論，本文非針對語義學做出考證，並給出標準答案，而是在於說明「素養」在不同脈絡中，需對不同的概念加以釐清與理解，以有利於本文進一步的探究。至此，可以得知「literacy」或「competency」的意涵，共同所指的是在素養、能力或知能的意涵之間，不僅是讀、寫的能力，也是一種溝通的關係。世界經濟合作暨發展組織(Organization for Economic Co-operation and Development, OECD, 2018) 在應對人工智慧、大數據、生物科技變化快速的環境，重新對「素養」作出思考，將知識、技能、態度與價值列為「素養」的三個主要內涵，凸顯「素養」不只是知識與技能的獲得，而是包含在因應時代變遷的複雜需求的情境中，關於知識、技能、態度與價值的可移動性(mobilization)。因此，一般探究與「素養」相關的議題，皆以知識、技能或能力及態度作為三個面向為主(王文君，2020；陳璽宇，2020；Alexander, 2018；Henrich, 2021；Long & Magerko, 2020)。

參、人工智慧素養的探討

一、人工智慧的意涵

「人工智慧」(Artificial Intelligence, AI)，又稱人工智能，此一詞始於由 McCarthy 等人(1955)於達特茅斯學院(Dartmouth College)組織的人工智慧十人研討會。這是人工智慧概念最初由來，即假設凡任何與人類智慧有關的學習領域，皆可透過機器處理，

以完成精準計算，主要研究在於讓機器可以如人類一樣具有智慧，擁有抽象思考能力，讓機器懂得使用語言，可做出與人類一樣的事情，且讓機器擁有自我改良的功能，以協助人類解決各種問題。然而達特茅斯會議有關人工智慧的討論，並未帶來任何新的突破，僅能作為開始（Russell & Norvig, 2011）。

早期有關人工智慧定義的研究，延續探討 McCarthy 等人所主張的電腦擁有自動化能力，以創造出可以感知、推理、行動的機器，如同人類具有思想及思考能力，從而協助人類做出理性的決策、解決人類學習問題（Bellman, 1978; Haugeland, 1985; Rich & Knight, 1990）。近期有關人工智慧意涵的探究，與早期研究所聲稱的人工智慧略顯差異，其因在於電腦普及化以後，人工智慧更為強調電腦程式運算，利用演算法進行數據的處理及分析（Chao et al., 2021; Domingos, 2015; Marr, 2018; Shubhendu & Vijay, 2013），是一種具有思考邏輯與行為能力，幫助人類解決問題及做出決定的科技（王文君，2020；陳昇璋、溫怡玲，2020）。Floridi（2016）進一步指出目前大多數研究人員，對於人工智慧機器設計的要求，提高到不再是類似人類的方式，而是機器可以透過自動化系統，處理複雜問題。

國內外文獻對於人工智慧的定義相差無幾，從最早假設是讓機器與人類一樣具有思考及行為能力，主要為解決人類的生活問題。近年，人工智慧定義轉為傾向機器是可以全面自動化，不再遵循類似人類的模式。從過去數十年來至今，不同學科的專業人士亦提供了他們自己對人工智慧的定義，各專業領域仍未達共識（王文君，2020；Chao et al., 2021）。人類雖已處於人工智慧時代，然而關於人工智慧意涵的普遍性，以適合於各學科之間，仍有持續探究之必要。

二、人工智慧素養（artificial intelligence literacy）概念的相關研究

人工智慧改變了當代的溝通、工作和生活方式。溝通，不再僅限於人與人之間，也包括人與機器的交流。傳統「素養」對讀、寫、算能力的意涵解釋，雖不足以因應人工智慧時代的學習需求，然而近年在各學科領域中對有關技能組合的定義，也融入讀寫算能力的概念，以將素養概念發展出更為廣泛的意涵，作為擴大獲取知識的途徑，加強與人分享、交流思想的能力，以應對新的人工智慧時代（Long & Magerko, 2020; Ng et al., 2021）。

Long 與 Magerko（2020）據文獻進行探索性回顧以後，對人工智慧相關的各種跨學科的領域進行探究，以主題方式得出十六項人工智慧素養的能力指標，作為人工智慧素養概念的框架，並將人與機器交流的這一組能力，稱為「人工智慧素養」，概念化為個人能夠批判性地評估 AI 技術；與 AI 進行有效溝通和協作；並將人工智慧運用於線上、家庭和工作場所，成為工作的工具。在具體定義十六項人工智慧素養能力的概念中，Long

與 Magerko (2020) 指出數位素養 (digital literacy) 是人工智慧素養的先決條件，因為個人需要了解如何使用電腦來理解人工智慧。Ng 等人 (2021) 依據 Long 與 Magerko 對人工智慧素養的探討，進一步概念化人工智慧素養，主張人工智慧素養的培養，以傳統素養的定義為基礎，理解人工智慧的知識、人工智慧的應用、人工智慧的評估能力以及人工智慧的倫理四個面向，作為人工智慧素養的概念化架構，為人工智慧素養所強調的數位素養、知識及技能的掌握，導入「以人為本」的思想。

在人性觀而言，Long 與 Magerko (2020) 解釋人工智慧素養在人性、動物性及機械性之間是有所差異的，對人工智慧素養的核心提醒，是首需認識人工智慧具有人類角色，理解人工智慧除了是一種從數據中學習的方式，人類更應該保有批判性的角度，對經由電腦分析而來的數據作出解釋，而非全然信賴電腦系統所獲取的數據面值。Ng 等人 (2021) 對當代人工智慧素養的強調，在於對人工智慧知識層面的掌握，用以了解人工智慧的基本功能及人工智慧應用程序的高階思維技能，將人工智慧運用於日常生活的不同場合，更為注重人工智慧的公平、問責、透明度及與倫理相關的議題。Long 與 Magerko (2020)、Ng 等人 (2021) 對人工智慧素養的概念化，不僅是指稱電腦化或機械化，而是人類日常生活的議題，且與溝通能力有密切關係，共同指向在人工智慧時代下的人性化及倫理道德的考量。

國內對人工智慧素養的研究，立足於教育領域展開探究，以發展人工智慧素養量表為主，對人工智慧素養作出操作性定義。陳璽宇 (2020) 對人工智慧的定義分為「知識」、「能力及技能」、「態度」三個面向，更為重視使用者對人工智慧的知識及能力的掌握，在態度上則關注使用者對人工智慧的興趣與價值觀為主。王文君 (2020) 有別於一般指稱的人工智慧素養強調知識及能力，提出人工智慧的知覺 (perception)，主張人工智慧素養必須包含同理心、耐心與團隊溝通，具備與他人合作的能力，原因在於人工智慧都是跨領域的結合，如無人車、Siri 及 AI 法官等，是不同領域彼此交流，提供自己領域的專業，共同將人工智慧完成，因此將人工智慧素養共構為「人工智慧知覺」、「跨領域合作的態度」及「人工智慧適應性」三個面向。

綜上所述，國內外對人工智慧素養相關探討，主要形成 AI 知識、AI 技能、AI 態度三個構面 (王文君, 2020; 陳璽宇, 2020)，顯示人類在運用人工智慧時，除了須具備數據素養概念，「以人為本」可以作為立基點，以保有人類的批判性思維，促使日常生活透過人工智慧的協助，展開有效溝通和合作 (Long & Magerko, 2020; Ng et al., 2021)。

肆、諮商素養的探討

一、諮商的意涵

關於「諮商」的意涵，美國心理學會（American Psychological Association, APA, n. d.）將諮商定義為一種專業關係。英國諮商和心理治療協會（British Association for Counseling and Psychotherapy, BACP, 2021）定義諮商和心理治療是涵蓋一切談話治療的總稱。諮商師須具備專業能力，透過談話治療，著重諮商師與個案之間合作努力的關係。當代的諮商定義，除仍然注重諮商是一種關係與歷程，更加強調當事人對生活的滿意，以促使生活更加豐富而美好（BACP, 2021），而不再僅是解決生活問題。McLeod（2009）認為諮商之所以產生許多不同的意涵，乃根源於諮商是跟隨當代社會變化而興起的歷程，演變相當快速。身處在人工智慧時代，諮商定義的演變是必然的，如何在諮商素養加入人工智慧概念，並給予重新詮釋，讓諮商領域的專業能力，在人工智慧的協助下，從而達到諮商的核心精神與功能，讓個案進行自我探索與自我了解，以期得到最佳發展，可以豐富生活，對生活更滿意，是值得探討的議題。

二、諮商素養意涵

在諮商領域而言，一般以諮商知識（counseling knowledge）、諮商技能（counseling skills）和諮商態度（counseling attitudes），指稱諮商能力，即「competency」（Alexander, 2018; Henrich, 2021; Sue et al., 1992; Swank & Lambie, 2016; Tate et al., 2014）。本文主要探究沿襲人工智慧素養所採用的「literacy」所形成的知識、能力及態度三個面向，對「諮商素養」（counseling literacy）作出概念化，認為「能力」及「技能」涵蓋在「素養」（literacy）的意涵之內，將「諮商能力」（counseling competency）列為諮商素養（counseling literacy）的三個面向之一。其他兩個面向分別為「諮商知識」及「諮商態度」，據此形成對「諮商素養」的概念化初探。因此，本文以 counseling literacy 指稱「諮商素養」，繼續沿用「competency」指稱諮商領域的「諮商能力」，以在詞彙及意涵上，與「諮商素養」作出區別。

首以「諮商知識」而言，一般以心理動力取向、經驗與關係導向、認知行為取向、系統觀點及後現代取向，作為諮商與心理治療理論的主要知識基礎（Corey, 2013）。在各個理論學派的諮商知識，皆有相同或差異的人性觀、哲學觀、治療目標、介入技巧及限制。

對於一位專業的諮商師而言，一個好的諮商理論，在於與其個人的助人理念是適配的，促使諮商師可與當事人進行溝通、協助人際關係的發展、職業道德的實施以及諮商師如何看待自己的專業（Gladding, 2004）。以諮商定義而言，諮商是一個涉及人際關係的過程（Patterson, 1985），在諮商師與當事人互動的歷程中，諮商理論可說是一種個案概念圖，成為諮商師對當事人作出問題假設的依據，以形成解決問題的方案。在諮商師對其專業認同上，Guindon（2011/2012）提出諮商知識最基本的要求是一般所設定的知

識標準，必須符合八大核心課程領域的專業，即是專業定向與倫理實務、社會與多元文化、人類成長與發展、生涯發展、助人關係、團體工作、評估、研究與方案評估。諮商知識何以被列為首項被探究的面向，在於諮商師熟悉各種諮商理論，並可在不違反其內在一致性的情況下運用諮商知識，以協助當事人解決個人議題或生活問題。

以「諮商能力」(competency)而言，Kaslow (2004) 針對心理學專業能力提出「能力」是經由專家導出且彈性的，是可觀察的 (observable)、可衡量的 (measurable)、可控制的 (containable)、可實施的 (practical)，闡明「能力」對專業心理學的意義，是由知識、技能和態度組成，是專業實踐所必需的，可以通過培訓和發展來提高。國內學者指出「諮商能力」係指諮商師從事諮商輔導工作具有的一般性、普遍性與重要性的專業能力 (劉淑慧，1999)，而專業或執業能力通常包括知識、技術和態度，三者統整起來成為專門執業人員所必需 (林家興、黃佩娟，2013)。

林家興、黃佩娟 (2013) 指出目前國內並沒有以諮商心理師能力指標為主題的實證研究，只有相近主題的研究。早期國內學者指出對諮商師的個別諮商能力的發展著力最多、描述最有系統的，當數發展性督導模式的文獻，並將有關文獻對於個別諮商能力發展，依過程技能、概念形成技能、個人化技能、專業行為做出整理，經懷德術調查而取得六個向度，作為諮商能力的架構，即專業行為、過程技能、概念形成技能、個人化技能、人格傾向與理論基礎 (劉淑慧、王沂釗，1995)。Mcleod (2009) 將諮商能力面向的分類與切割，概括為人際技巧、個人信念與態度、概念化的能力、個人的自我覺察、技巧的純熟度及了解社會系統的能力。林家興、黃佩娟 (2013) 所提出的諮商心理師能力指標，包含六個能力指標，首三個指標，即衡鑑診斷與概念化能力、介入能力及諮詢能力，概括劉淑慧、王沂釗 (1995) 及 Mcleod (2009) 對諮商能力的意涵指稱，增加了研究與評鑑能力、督導能力及管理能力，指向諮商師需要具備更為全面化的諮商能力。

近年有關諮商能力的探討，則指出諮商能力是諮商師在提供諮商服務時必須具備的一套技能 (Setiyowati et al., 2019)。Gladding (2004) 認為諮商師需要運用諮商技能，如改變觀念 (changing perceptions)、領導 (leading)、多重焦點回應 (multi-focused responding)、準確的同理心 (accurate empathy)、自我揭露 (self-disclosure)、立即性 (immediacy)、面質 (confrontation)、訂立契約 (contracting) 和演練 (rehearsal)，讓當事人以不同的方式看待他們的生活，並相應地思考、感受和行動，以做出改變。Hill (2006) 提出諮商技能一般為鼓勵、重述與改述、摘述、打斷 (談話)、統整、提問、面質等。BACP (2020) 在諮商專業能力的架構上，廣泛定義諮商能力是在相關專業角色和環境中，安全而有效地使用諮商技能所需的知識、技能、能力、行為和態度，界定諮商技能是價值觀、倫理道德、知識和溝通技巧的結合，用於支持他人的情緒健康和幸福感，分為五個能力指標，即專業背景、同理心、技能和技巧、工作聯盟與個人素質。

在「諮商態度」而言，Guindon (2011/2012) 指出諮商師須藉由行動，傳達出尊重、

接納、關心與溫暖的態度，尤其是專注的態度，專注的傾聽，透過理解個案，而展現諮商師的同理心。同理心是諮商師的人格特質，其所展現的是一種諮商師的態度，也是諮商技巧。McLeod (2009) 認為諮商師的個人態度、信念與價值，需要輔以諮商師自我覺察的能力，融合於諮商歷程中，同時從個案的經驗與知覺中學習，達到與個案建立關係，經驗同在。Lambie 等人 (2018) 在諮商態度上，則列出同理心與關懷 (empathy and caring)、尊重與慈悲 (respect and compassion) 為考核項目。綜合對諮商知識、態度與能力的意涵探討，在諮商知識及能力的意涵中，涵容了諮商態度的展現，如重複提到同理心、個人信念與態度等。因此，諮商態度可說是結合了諮商技能與諮商知識，是最可以顯現一個諮商師的素養所在。

諮商，是一種人影響人的過程，首重人與人的關係，諮商師與個案必須形成治療同盟或工作同盟的關係，相較於特定的諮商理論知識，甚至於諮商師的特質，更能帶來正面的治療效果 (Corey & Corey, 2016)。在能力或態度上，仍採用 Rogers (1961) 所建立的有效關係的核心條件，在於諮商人員所展現的同理心、尊重、真誠一致、接納，無條件的積極關懷的態度，其目的皆在於達到與個案建立信任關係，有效的諮商取決於治療關係的品質。

綜上可以得知，當代諮商素養分別以知識、技能及態度三個主要面向構成。本文亦針對諮商知識、能力及態度在意涵上，做出釐清與整理，形成諮商素養構念的由來與討論，作為人工智慧素養與諮商素養跨領域結合的概念依據。

伍、人工智慧與諮商觀點的相關研究

人工智慧時代，是無可避免的潮流所向。然而，早期已有人工智慧與諮商領域做出跨領域結合的研究，主要以精神分析學派及認知學派為主。精神分析學派與人工智慧的結合，探究人工智慧運用於心理分析的願景基礎，強調人工智慧去人性化，向機器性學習，提出人工智慧及精神分析可以成為一組新聯盟關係，在人類精神生活的本質上，具有一套可以被人和機器共享的原則 (Turkle, 1988)。認知心理學派與人工智慧、諮商做出研究，發現電腦程序模擬的操作方式，可以為各種諮商系統的設計，提供有效作用。除了可以對臨床實驗進行有效分析，亦可作為認知心理學理論系統化 (Brack et al., 1994)。

近年，有關人工智慧與諮商領域結合的研究，以諮商理論的認知學派為主 (Fitzpatrick et al., 2017; Fulmer et al., 2018)。諮商方式，是以人工智慧產品與網絡形成的線上諮商 (Bakar et al., 2020; Bharti et al., 2020; D'Alfonso et al., 2017)，或以自動對話媒介，一般稱為聊天機器人。人工智慧聊天機器人，是一種透過自然方式與人類進行交談的軟體應用程式，如 Apple Siri、Google Now、Samsung S-Voice 等及其他 (Oh, 2017)，惟在諮商領域的研究則以 Woebot、Medbot、Chatbot 等聊天機器人為主 (Bharti et al.,

2020),以對情緒識別做出精準分析(Oh, 2017),皆使用自然語言處理(Natural Language Processing),透過文字、圖形、語音在網頁提供的應用程式進行互動。

就人工智慧與諮商觀點,屬跨領域結合的論述而言,據以上早期到近年有關人工智慧與諮商的研究,可以得知皆以電腦輔助治療,對焦慮和抑鬱症狀可達到有效治療,形成可替代的諮商方案(Fitzpatrick et al., 2017; Fulmer et al., 2018)。Fulmer(2019)從歷史、當代、近期和長期的四個層次的視框,對人工智慧運用於諮商領域做出闡述,認為將諮商專業所要求的三項原則,即關係建立、賦權以及達成諮商目標,可形成諮商結構,融入人工智慧領域。然而Fulmer(2019)所提出的人工智慧諮商結構,是一種概念性的探究,仍需要更多的深入探討。國內有關人工智慧與諮商的討論,亦提出人工智慧逐漸普及於人類社會,在專業諮商與輔導教育的領域中,如何善用人工智慧進行諮商專業培訓,以協助諮商實務的進行,有隨之調動的必然性(林巧莉、謝麗紅,2021)。

人工智慧的發展,開始於企圖發展出接近人類智慧的機器,從最早期的研究結果,發現人工智慧和認知心理學目前是最可行的整合。國內外相關文獻,皆指出人工智慧對諮商領域所帶來的衝擊,惟在「人性」與「機器性」之間,將從人與人的互動,轉變為人與仿人類的人工智慧的互動(林巧莉、謝麗紅,2021; Fulmer, 2019; Long & Magerko, 2020; Turkle, 1988)。人類世界可能面對大量未知的存在主義問題,這些生存問題或心理適應問題需要專門研究人類情感和危機的人,例如諮商師,可對人與仿人類如何互動議題,進行相關探討(Fulmer, 2019)。

綜上所述,Fulmer(2019)認為若人工智慧運用於諮商領域中,讓人工智慧和諮商有其介面(interface),即本文所指的差距彌合,首先須要認知到人工智慧如何且已經對諮商領域造成衝擊與影響,需建立起在不同的專業領域中,彼此之間的尊重、啟動跨領域的對話與合作機制。人工智慧時代的諮商領域,如何達到人工智慧與諮商的融合以求其共存,在人工智慧素養及諮商素養之間,其中所顯示的概念性差距可進行彌合,是跨領域整合的架橋工作,有其不可忽視的必要性。

陸、人工智慧諮商倫理和社會挑戰(ethical and social challenges)探討

在廣泛使用人工智慧的時代,以人工智慧時代產品研究的巨擘,如Google、臉書、微軟等皆自2017年始,在進行人工智慧產品開發之際,亦各自成立人工智慧倫理研究小組,為社會和經濟用途的相關技術制定負責任的道德準則(中央社,2020;吳家豪,2020)。

人工智慧心理健康的應用,具有潛在優勢,包括可產出全新的心理治療模式、可獲得與難以接觸的族群接觸的機會、透過線上模式的隱密空間,獲得個案更為理想的回應,也可以為諮商師騰出更多時間。Fiske等人(2019)就精神病學、心理學和心理治療三大

領域，如何轉換為人工智慧方式的探討中，對倫理和社會影響兩大面向做出全面評估。從倫理角度觀之，人工智慧嵌入諮商模式，尤其運用在心理治療領域，不僅涉及線上諮商倫理議題，其中相關倫理及對社會責任需要做出更多的探究。

一、諮商師使用人工智慧數據的倫理議題

一般諮商倫理議題，概指在諮商關係中，當事人的福祉及權力。凡有關諮商機密，則以當事人的隱私權及最佳利益為考量。諮商師運用電腦及測驗資料的倫理議題而言，需確定電腦化系統是否符合當事人的需要，當事人是否有能力使用及瞭解用電腦化系統諮商的目的及功能。在網路諮商倫理，則強調諮商師應具有熟悉電腦網路操作程序、網路媒體的特性、網路上特定的人際關係與文化外，並具備多元文化諮商的能力，特別應對當事人加以說明，有關網路安全與技術的限制、網路資料保密的限制（台灣輔導與諮商學會，2001）。實證研究則指出在人工智慧倫理議題上，提醒電腦計算程式的透明度，以及理解人工智慧應用程序對人類生存狀況和心理疾病，所帶來的長期影響為何（Fiske et al., 2019; Knott et al., 2022）。

劉湘瑤等人（2021）據 UNESCO 對人工智慧倫理的註解，指出人工智慧領域的發展日新月異，而規範這一領域所需的法律、社會和倫理環境卻發展得非常緩慢。國內有關人工智慧所可能帶來的倫理爭議，包括軍武、取代人力、隱私、歧視性、數據偏差、易受傷害族群保護問題、法律責任歸屬及執照問題的八個面向（曾育裕、黃資晟，2021）。而在醫學人工智慧化對倫理與挑戰的探討，傾向人工智慧可成為輔助性診斷模型，但強調人性關懷與醫病之間的互動，以及醫療照顧責任歸屬等面向，是醫療界的基本核心價值（郭萬祐，2021）。國外有關人工智慧倫理議題，概括隱私性、就業、錯誤信息、獨特性、倫理決策、多元性、偏見、透明度及問責制等作為考量，強調注重「以人為本」的思維（劉湘瑤等人，2021；Long & Magerko, 2020），避免人工智慧應用產生偏見（吳家豪，2020）。

在面對人工智慧諮商倫理和社會挑戰，究其倫理議題的重要性，據人工智慧相關研究所注重的大數據蒐集及分析，在人工智慧的發展的過程，必然需要建立龐大的數據，諮商師使用人工智慧獲取各種數據，亦可帶來資訊隱私權的倫理議題（曾育裕、黃資晟，2021）。在處理過程中需要「人」的介入，不能只仰賴電腦演算法。微軟內部訓練提出發展人工智慧，為了避免潛在性偏見，以及為協助企業定義負責任的人工智慧策略，提出六大準則，包括公平、可靠、隱私和安全、包容、透明、負責。此為官宣人工智慧倫理的策略範疇（中央社，2020）。

二、人工智慧設計發展應用於諮商領域的倫理議題

人工智慧除以心理諮商應用程式，為傳統諮商帶來改變，筆者在搜索人工智慧運用於臨床心理治療相關研究，從而得知諸如為失智照護而設的「虛擬心理治療師」(Sharma et al., 2018)、為應對自閉症而研發的社交機器人 (Mazzei et al., 2011)、應對性障礙而產生的機器人 (Jecker, 2021)，甚至於被開發出來高度仿真人類嬰兒神經機器人模型 (BabyX) (Knott et al., 2022)，令人工智慧、心理學及諮商領域達到整合，主要為人工智慧虛擬治療師和聊天機器人，從心理治療應用程序，轉化為虛擬人物，融入使用者的日常生活，衍生另一有關倫理議題的關注點，有關傷害預防 (harm prevention) 的倫理議題 (Fiske et al., 2019)。

人工智慧即非人類療法的角色 (the role of non-human therapy)，但具人類情緒感受的機器模型，是否引起人工智慧的情緒性傷害，且人工智慧擁有生存權與否 (劉湘瑤等人, 2021)，目前的知識論無法提供相關知識，尤其無法確知在人類的大腦及人工智慧的結合下，其情緒行為如何運作。因此，在融合人工智慧與心理治療的應用中，需確定和討論的具體挑戰包括：風險評估、轉介和監督問題；尊重和保護個案自主權的需要 (Knott et al., 2022)。

由是觀之，近年人工智慧相關研究中所提出的倫理問題意識，已不單向探究以人類做為主要面向的倫理考量，而是以逆向思考位置，站在仿真機器人的位置做出思考，具情緒性的仿真機器人可能面臨因為具感受性的設定，而帶來仿人類的真實傷害情緒，以此提醒對創研情緒性機器模型的發展者，必須承擔相關倫理責任 (Knott et al., 2022)。人類在開發人工智慧的過程，須具有倫理耐性 (moral patiency) (Danaher, 2019)，注重人工智慧「以人為本」的「人性化」的倫理議題 (郭萬祐, 2021；劉湘瑤等, 2021；Long & Magerko, 2020)。

柒、討論與反思

一、人工智慧素養和諮商素養之架橋

綜覽國內外關於人工智慧及諮商兩大領域，對於「素養」及「能力」相關概念的探究，在「素養」概念上，尋找兩大領域的共同及差異的特點作為銜接口，以進行架橋工作，發現兩大領域對「素養」所採中英詞彙雖有差異，皆以知識、技能或能力與態度作為主要的三個面向。人工智慧素養，概括 AI 知識、AI 技能及 AI 態度三個面向，是一組能力的組合 (王文君, 2020；陳璽宇, 2020；Long & Magerko, 2020)。諮商素養則含蓋諮商知識、諮商能力及諮商態度三個面向 (Alexander, 2018; Henrich, 2021)，強調掌握

諮商技能，以作為諮商能力的展現。在兩大領域的差距彌合中，知識、能力（技能）及態度是架橋工作需要共同探究的三個面向。

（一）AI 知識與諮商知識

人工智慧素養的知識層面，一般可知的是機器學習、深度學習、自然語言、電腦視覺及機器人技術，用於模擬人類做決定的過程，以改善人們的生活（Chao et al., 2021）。諮商知識被定義是諮商師透過掌握相關諮商訊息及知識資源，對前來的求助者進行心理治療，以處理生命任務和目標的專業服務的歷程（Gustad, 1953; Maura et al., 2001）。

Long 與 Magerko（2020）主張人工智慧素養主要展現在數位素養，是必須具備的基本知識。Belshaw（2014）在專論「數位素養」概念中，首要釐清數位素養並非指稱標準化的電腦技能學習的統一觀，需融入文化觀作為「數位素養」的首要元素。在人工智慧知識的討論中，除了電腦技能的學習為基本要求，更多的探討在於為人工智慧融入了素養、能力與文化觀的內涵，是連續性的養成過程。

諮商知識以人工智慧的語言而言，第一功能在於成為識別個案提供信息的依據，以作出診斷，讓個案對自己有更多的了解，從而接受自己。第二功能是諮商師透過知識產品（knowledge products），如書籍、報告、視聽材料等，用以識別、獲取和組織個案信息，讓個案達到自我理解。第三功能則是確定求助者的需求是否被滿足，用以評估諮商程序的效率和有效性，落實到現實生活，在社會中可以成為更快樂、更有自我效能感的個體（Gustad, 1953; Maura et al., 2001）。

在人工智慧知識與諮商知識的概念上，共同之處為透過掌握訊息，主要目的在於獲得更多理解，從而幫助當事人作出決定，以獲得生活的滿足。人工智慧的訊息擷取顯示在數據上，是該領域所強調的「數位素養」，注重個人的理解與分析，以數據作為分析的依據；諮商知識掌握訊息的方式來自個案，差異在於評估方式。人工智慧以數位素養見稱，結果有效性與否，經電腦演算以後，可獲得客觀性的評估。諮商的評估卻以當事人的需求被滿足與否，以此評估其有效性，屬主觀性的評估。

在人工智慧與傳統諮商之間，當以「數位素養」作為二者差距之間的彌合。人工智慧素養強調電腦演算所取得的數據，作出個人分析，是為了在評估過程增加客觀性。諮商領域需要「數位素養」，在於可以補足諮商領域所強調的，以求助者需求被滿足與否，作為評估諮商有效性，傾向主觀性認知，而「數位素養」可以增加對個案形成客觀性的評估，減少主觀性的認知。將「數位素養」彌合到諮商領域，作為核心指標，可以形成本文對「人工智慧諮商素養」架橋工作的第一步。

（二）AI 能力與諮商能力

據人工智慧素養對能力論述，一般被認為是在不同場景中應用人工智慧知識，擁有可以識別人工智慧科技產品的能力，並進一步辨別產品的優劣(Long & Magerko, 2020)，以確定人類何時使用人工智慧，或是人類技能是合適的(Kandlhofer et al., 2016)。然而在強調使用電腦設備的數位能力而言，不僅需要對數據有閱讀、處理及分析的能力(Bawden, 2008)，也需要擁有對所獲得的數據，進行批判性反思的能力(D' Ignazio, 2017)，同時可使用電腦代碼來表達、進行探索和交流思想(DiSessa, 2001)。在展現人工智慧能力的相關運作上，是結合知覺性能力、適應性及跨領域合作的態度(王文君, 2020；Kandlhofer et al., 2016)。人工智慧能力，不僅指稱對技術的掌握，在機械性的人工智慧世界，講究合作性及適應性，更注重交流及溝通的能力，接近諮商是關係建立，合作聯盟的概念。

筆者發現「人工智慧素養」內涵，強調的是數位素養，即以人工智慧技術對現有的大數據或已經蒐集個案的數據進行分析的能力，可作為加強諮商資料的分析，得出更為客觀的治療計劃。且數位素養亦強調交流及溝通(Belshaw, 2014)、合作性及適應性(王文君, 2020)；以諮商領域而言，個人諮商或團體諮商，皆強調技巧、評鑑以及合作性(林家興等人, 2015；劉淑慧、王沂釗, 1995；謝麗紅, 1998)。Kalkbrenner (2021) 也在諮商能力所強調的評估能力上，提出增加評估素養(*assessment literacy*) 的論述，指出評估素養是諮商專業的關鍵能力，以對個案的測試及所得分數，進行客觀分析。在專業諮商過程中，未具備充分使用心理測量儀器，因為專業診斷過程若缺乏數據證明，所做出診斷與處遇，所帶來的負面影響是令人擔憂的。因此顯示諮商人員需要人工智慧數據學習的能力，以取得客觀分析的結果。

在對文獻的探討中，發現人工智慧素養所提出的「數位素養」，以及由諮商素養發展諮商能力所提出的「評估素養」，可以作為跨領域結合的架橋工作的核心內涵，是為本架橋工作的第二步。「數位素養」及「評估素養」皆強調交流與溝通，以達到適應與合作，據此亦形成人工智慧素養與諮商素養三大構面之一的能力面向，即「人工智慧素養溝通能力」，是為本架橋工作的第三步。

(三) AI 態度與諮商態度

王文君(2020)在人工智慧素養的態度上，則提出在瞬息萬變的數位科技時代，顯現複雜性的多元觀點、想法、建議，跨領域結合需要採合作的態度(Ambrose, 2017)，與他人可以擁有相同語言，才能夠互相理解(Schulz et al., 2015)，人工智慧素養不僅是程式設計的技術，而是在具備人工智慧知識以後，能與其他領域的專業展開合作，展現各自的專業，因此人工智慧素養的態度，意指可跨領域合作的態度。Ng 等人(2021)則進一步在人工智慧素養的態度上，強調需對數據持批判性態度，倡議需以「以人為本」作為人工智慧素養的思想基礎。

以諮商態度而言，助人者需有良好的人性品質（human quality），在專業的諮商態度可以促進個案成長或抑制，造成個案的改變，主要在於透過諮商技能如專注積極的傾聽、同理等，當事人可以感知助人者的尊重、接納、關心與溫暖的態度（沈湘縈等人，2010；McLeod, 2009; Rogers, 1961）。Setiyowati 等人（2019）從人文主義的角度探討諮商態度，提出諮商師應該具備的四個諮商態度是：一致性、無條件的積極關注、同理心（Rogers, 1961）、真誠信任（Corey & Corey, 2016），以加強個案的心理發展，增設文化技能（culture skill）以凸顯諮商品質（quality of counseling）。

據此可以得知諮商態度傾向探討成為一位諮商師或助人者，其所應具備的態度，是一種人性化的展現（Rogers, 1961），迥異於人工智慧的機械性。諮商態度，強調無條件接納，並不對案主採批判態度，然而人工智慧素養則注重人工智慧在進行數據分析時，保持批判性的態度（Long & Magerko, 2020）。數位素養的第七個指標亦為保有批判性（Belshaw, 2014）。此為人工智慧素養與諮商素養的極端差異，人工智慧素養所主張的批判性態度，在在顯示為展現人類在運用數位技術時，須保留人性化思考，然而諮商素養則主張對個案須持全然接納的態度。二者之間極端差異，人工智慧的批判性可以彌合諮商素養全然接納的態度。據此，形成人工智慧諮商素養的態度構面，即「人工智慧諮商素養批判態度」，是為第四步。

以人工智慧對文化觀的探討，Belshaw（2014）的「數位素養」概念中，融入文化觀作為「數位素養」的首要元素，其因在於個人與社會議題在科技化的時代，是很難被切割的，如同王文君（2020）提出人工智慧素養的態度上，在面臨複雜性的多元觀點時，需要呈現理解和合作的態度。近代諮商領域亦出現大量多元文化諮商探討的文獻（沈湘縈等人，2010；Corey & Corey, 2016）。國內對於網絡諮商的諮商倫理，亦強調在網絡上特定的人際關係與文化，需具備多元文化諮商的能力（台灣輔導與諮商學會，2001）。Corey 與 Corey（2016）亦提出對於不同種族或文化背景不同的案主，諮商師應具備了解差異的態度，避免預設模式，並對案主展現諮商師的尊重態度，以便和案主間的差異搭起橋樑。兩大領域對文化知覺的重視，據此形成人工智慧諮商素養之知識面向的首要指標，即「人工智慧素養的文化知覺」，作為人工智慧素養與諮商素養架橋的第五步。

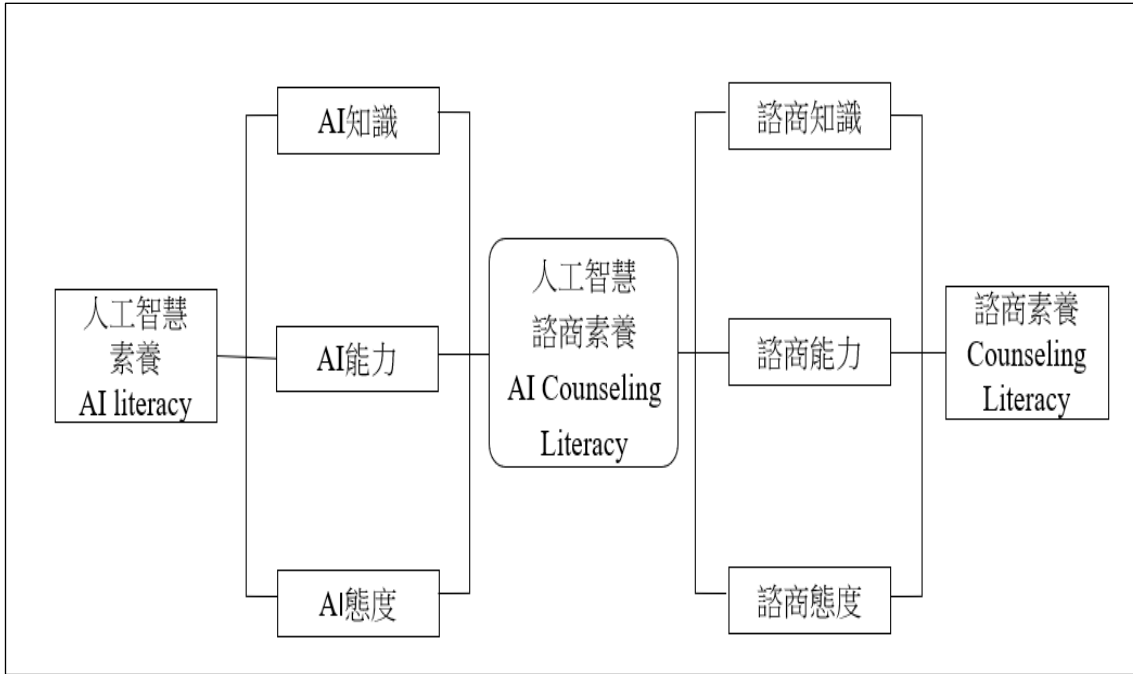
本文據人工智慧素養及諮商素養相關文獻，作出探究、討論及歸納，從中發現兩大領域所提出的核心概念、意涵及指標的共同性與差異性，可以獲知諮商專業強調個案對人性內在的感受、情緒及認知進行探索、瞭解和澄清（林建平，2005；APA, n. d.; BACP, 2021）；人工智慧的設計原則在於研究出具感知、學習、推理、協助決策，並採取行動，幫助人類世界解決問題的人工智慧科技（Russell & Norvig, 2011）。兩大專業領域的共同目標皆是為了解決人類生活問題，諮商素養強調情感上的支持，形成個體的力量，而人工智慧素養則強調學習及推理，去除人性上的主觀，以數據證據做出適合的決定，解決生活問題。據此，本文可以將人工智慧諮商素養，理解為在諮商過程展現數位素養及評

估素養，保持對文化和科技的知覺，對數據面值及評估結果持批判態度，以達到跨領域的理解與合作，幫助解決人類的生活問題，分為三個構面，即人工智慧諮商文化知覺、人工智慧諮商溝通能力、人工智慧諮商批判態度。

最後，本文據以上建立於對兩大專業領域相關文獻資料的發現與討論，所形成的構念歷程，即「人工智慧諮商素養」意涵概念化的構念形成歷程，經演化而生成的五個步驟，簡述如下。

首以知識、技能或能力及態度三個面向，作為「人工智慧諮商素養」(AI counseling literacy) 概念性初探的基礎，整理如圖 1。

圖 1
人工智慧素養和諮商素養之架橋



資料來源：研究者自行整理

人工智慧與諮商的素養意涵概念化的架橋歷程的五個形成步驟，簡述如下。整理如圖 2。

步驟一：首取人工智慧素養核心，即「數位素養」作為彌合諮商領域不足的架橋。

步驟二：取諮商素養核心，即「評估素養」作為縮小與人工智慧素養「數位素養」的差距，即如何以電腦系統取得數據的方式，將諮商素養核心的「評估素養」得到更佳的效果分析。

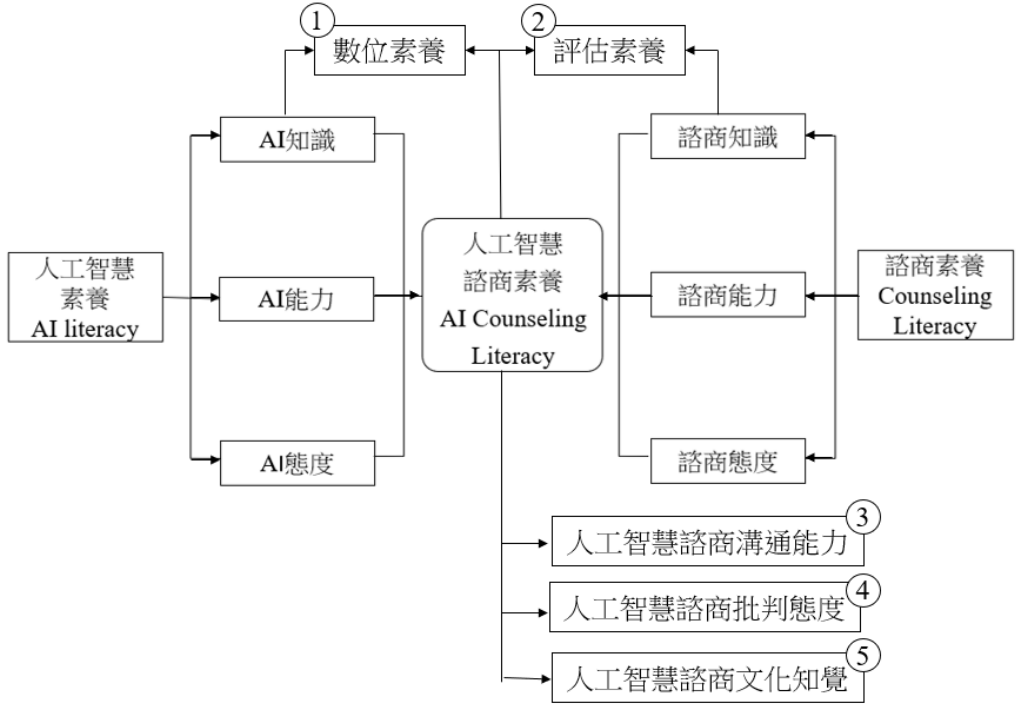
步驟三：以人工智慧素養與諮商素養所強調的溝通交流，人工智慧素養強調人與數據交流，諮商素養強調人與人的溝通。在此二者的交流與溝通之間，以人工智慧的機械

性彌合諮商的人性化，縮小其中距離，形成「人工智慧諮商溝通能力」作為人工智慧諮商素養的架橋。

步驟四：以數位素養核心，所強調的批判態度，補足諮商素養所強調的全然接受的態度，在極端差異之下，作為跨領域對話的架橋工作，形成「人工智慧諮商批判態度」作為人工智慧諮商素養的架橋。

步驟五：以數位素養首要指標文化觀，與諮商領域所強調的文化知覺作出彌合，是此跨領域整合的終極目標，以因應現在生活以及未來世界所需要的交流溝通，達到適應與合作，解決人類問題，形成「人工智慧諮商文化知覺」作為人工智慧諮商素養架橋的首要指標。

圖 2
人工智慧素養與諮養素養之差距彌合



資料來源：研究者自行整理

二、人工智慧諮商素養形成與諮商領域的反思

筆者們企圖以諮商與理工領域對話的角度，在人工智慧與諮商素養兩個域領，在機器性與人性之間，為其差距做出彌合，做為架橋工作的初探。在統整本文概念論述的過程中，深知一位諮商師應當在專業上展現諮商知識、在諮商能力上展現諮商技巧，並在

諮商態度上，不僅展現溫暖接納的態度，更需要具備多元文化諮商的態度，並將人工智慧所強調的數位素養融入諮商領域。作為因應數位潮流趨勢下，在創新之間，如何立足於本土作出屬於東方思維的思考，是值得持續探討的研究議題。以下為筆者針對在名詞釋義、諮商專業能力及有關人性與機器性的諮商態度作出反思。

（一）在名詞釋義及定義與本土性的反思

「素養」一詞，找不到一個固定的英文辭彙作為適合的對應概念，而在不同的語言中的對應詞彙也有所不同，因此在意涵上亦有差異，如英語與法語（UNESCO Institute for Statistics, 2008）。「素養」帶有東方傳統文化韻味的詞語，在被賦於傳遞西方「competency」的內涵，卻完全遺忘了自身的本土意義（楊俊鴻，2018；趙偉黎、孫彩平，2017）。

國內金樹人教授將「諮商師特質」命名為「諮商師素養」，認為「特質」是靜態的，而「素養」卻有其展延性，也是屬於東方文化的用語（沈湘縈等人，2010），分為專業素養與人格素養兩個層面以茲觀察。

當在釐清國內外有關「人工智慧」、「素養」的定義，或是諮商師的素養是什麼，仍須面對在中英詞彙上翻譯上適切性的問題，在各自不同文化及歷史脈絡中，其中有不同的解讀方式，因此在為諮商領域與其他專業領域做出架橋工作之時，仍需立足於本土文化所涵有的東方特質做出更多反思。

（二）在人工智慧時代對諮商師專業能力的反思

在探究人工智慧素養與諮商素養架橋的議題之際，筆者在過程中對於諮商師專業能力如何迎向人工智慧時代作出反思。

據近年文獻可以從中發現有將心理學與人工智慧結合，透過網絡應用程序，發展出通過機器智慧協助情緒衝突的患者，可經由電腦輔助作出分析（Mello & Souza, 2019），也有提出諮商能力與數位素養作出探討，主張諮商師必須具備數位素養的基本能力、知識、態度及觀點，處理資訊或科技知識，並將數位素養列為諮商師應掌握的技能，以適應科技變化，成為諮商能力指標之一（Julius et al., 2020）。Yang 與 Talha（2021）則提出處在人工智慧時代的大數據背景下，為學校的輔導工作帶來新挑戰。目前有關人工智慧素養與諮商結合的文獻而言，傾向主張諮商師可運用 AI 來做資料蒐集，使諮商評估過程自動化，評估結果更為客觀化，可以借助人工智慧，為個案謀求最大的福祉。

人工智慧在諮商專業能力的展現上，不管是與心理學做結合，或是在學校場域，皆指向當前的諮商領域重視的是諮商師在專業能力上，是否掌握數位知識的能力，如深度學習、機器學習、自然語言等，或是諮商師是否應該具備編寫程式的能力，亦同時影響諮商教育的訓練系統。在傳統諮商情境，諮商師需要通過提問來了解個案，並透過個案

所願意披露的信息量評估個案，以建立諮商關係，然而處於人工智慧時代，數位化普及，在諮商能力所強調的概念化能力、評估能力，其運作方式亦將隨之改變，所以諮商師需要運用人工智慧的計算能力以作出分析。然而，目前仍缺乏實證研究證明可行性或實用性。

據以上文獻探討與反思，可以發現其共同主張在於，諮商人員的專業不再僅是掌握諮商知識、諮商技巧及全然接納的諮商態度而已。處在當前人工智慧時代漸進的過程中，隨著新媒體技術在網際網路上的滲透，探索新的諮商模式，以提高對人工智慧的認知，加強人工智慧能力的培訓，讓諮商師學習運用大數據模式的思維和技術，學習數位素養與數據管理（data management），以取得科學性的分析，是輔導與諮商人員在人工智慧時代專業化的重要組成部分。諮商專業領域迎來人工智慧時代的挑戰，須覺察人工智慧為諮商輔助的必要性，是當前諮商教育數位化的重要任務。

（三）人工智慧諮商教育養成的課程規劃

諮商是人與人的關係，是諮商師與當事人的治療關係（Burk & Stefflre, 1979; George & Cristiani, 1986; Kaplan et al., 2014）。人工智慧是人與機器的關係。在人工智慧與諮商之間，是機械性與人性之間的拉鋸。在機械性的人工智慧領域，提倡的是以批判角度保留人性；在以尊重人性化為核心思想的諮商領域，則提倡如何融入機械性。然而不論是人工智慧或諮商的機械性與人性之間，皆以發展適合的溝通能力為主，主要目的是幫助人類在面對生活困境之時，可以發展出做決定的能力，解決生活問題。這是人工智慧與諮商素養共同注重的核心目的，不論是機械性與人性，皆在於為人類謀求福祉。

在使用人工智慧的時代，尤其運用在心理輔導與諮商領域，不僅涉及線上諮商倫理議題，對於人工智慧嵌入諮商模式，其中相關倫理及對社會責任需要做出更多的省思與探究，因此課程規劃時應將倫理議題融入課程中，讓學生具有人工智慧倫理素養。在傳統諮商與人工智慧諮商的人性與機器性的反思下，輔導與諮商人員必須學習且善用時代科技下的產物——網路、媒體、人工智慧等，以提昇諮商服務品質和教育訓練的效果，並利用各類訓練與課程設計，透過諮商養成教育的專業課程為基礎，安排人工智慧素養的相關訓練做為增能課程，接著安排 AI 在輔導與諮商的應用作為進階課程，來精進諮商專業效能，已是刻不容緩的挑戰。

三、結語

人工智慧時代的來臨，為因應資訊環境的變化，每個領域的發展皆需與時並進，尤其是被號稱第一不會被人工智慧取代的諮商領域。一位具人工智慧素養的諮商師，應該關注人工智慧時代下，社會、家庭、個人生活形態的改變與心理適應的衝擊與問題，並

在諮商專業展現能夠透過數位化學習，結合人工智慧可運算及使用數據進行評估與分析的能力，將數位化概念與技能，落實在現代化的諮商領域，俾能展現知識、能力及態度的跨領域結合。如何將人工智慧落實於輔導與諮商領域的訓練課程，可從不排斥人工智慧，學習運算思維及程式設計扎根，由淺入深引發興趣，養成運用人工智慧的正確知覺與態度，具備跨領域對話、合作態度，以培育人工智慧時代的諮商人才。綜觀國內外對素養、人工智慧素養及諮商素養概念的相關文獻探討，以建立臺灣人工智慧素養及諮商素養架橋工作，對人工智慧諮商素養的差距彌合加以討論，以期成為輔導與諮商實務工作者、養成教育機構課程規劃與後續相關研究之參考。（註：本文之部分內容曾發表於第四屆社會科學本土化學術研討會暨第五屆本土諮商心理學學術研討會）

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When Counseling Meets AI: Bridging the Gap Between AI Literacy and Counseling Literacy

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Abstract

The advent of the era of the artificial intelligence, its technologies and products have become popular in human society and formed a new world. When humanized counseling meets mechanical artificial intelligence, the first thing to do is to explore what the connotation of “literacy” for these two domains refer to, and how the three-dimensional concepts of knowledge, competency and attitude form. Based on the lack of relevant literatures, the discussion on the exploration of interdisciplinary concepts in this article is mainly divided into four categories: “AI Connotation”, “AI Literacy Connotation”, “Counseling Connotation” and “Counseling Literacy Connotation” to hope to have preliminary understanding and contribution to this topic.

Artificial intelligence literacy is divided into three dimensions: AI knowledge, AI competency, and AI attitudes; the core concept is the learning and mastery of digital literacy to achieve the purpose of communication. Counseling literacy covers three dimensions: counseling knowledge, counseling competency, counseling attitudes; the core concept is emphasizing mutual interaction between people, mastering counseling skills to show professional competency, and developing assessment literacy.

According to the conceptual preliminary exploration of bridging the gap between AI literacy and counseling literacy, three aspects of artificial intelligence counseling literacy have been initially formed, namely, AI counseling cultural perception, AI counseling communication competency, and AI counseling critics attitude. This article defines AI counseling literacy as demonstrating digital literacy and assessment literacy during the counseling process, maintaining the perception of culture and technology, and being critical attitude of data and evaluation results, to achieve interdisciplinary understanding and cooperation to help to solve the problems of human life. Finally, this article reflects on the exploration of bridging the gap

between artificial intelligence literacy and counseling literacy, hoping to bring more discussions on related topics and become a reference for subsequent related research.

Keywords: Artificial Intelligence, AI literacy, counseling literacy, AI counseling literacy

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I. Introduction

Computer science started in the 1950s. In the counseling field, past literature has also explored the computer competence counselors in the computer age should possess, emphasizing that counselors should be able to use computer applications. The five abilities are computer abilities of word processing, spreadsheet, database management, computer desktop publishing, and data communication, and it is proposed that computer abilities should be included in the curriculum of tutoring departments (Timothy, 1988). In response to the COVID-19 epidemic, all walks of life have begun to respond online. Teaching in counseling has also started to conduct courses, seminars, individual consultations, or group consultations through online video conferences under relevant measures. It has been found that the available online video conferencing applications are pretty diverse and convenient, completely different from the early era of computer technology when only text or voice communication was possible. The artificial intelligence consultation method breaks through the spatial distance in the epidemic era and opens new communication and interaction between counselors and cases. At the same time, in the current epidemic, modern people's psychological distress has doubled, and more and more people are seeking help from psychological counseling. How can the counseling field make good use of artificial intelligence technology to make timely responses and usher in a new world of artificial intelligence for the counseling field? Challenges it is an inevitable trend to keep pace with the times.

In the field of professional counseling and counseling education, Lin and Hsieh (2021) are the first to discuss and reflect on the impact that the era of artificial intelligence will have on counseling and counseling education. This caused the author to think about the counseling literacy that a counselor displays in terms of artificial intelligence literacy. However, when considering this issue, we should first explore "counseling literacy." And what is "artificial intelligence literacy"? The author searched and reviewed relevant literature and found that there is not much available literature, whether it is the concept of artificial intelligence literacy or counseling literacy. Different fields also have their definitions of "literacy," which shows that "literacy" is still unclear in a state of inquiry. Based on this, the author came up with the concept of "artificial intelligence literacy" and "consultation literacy" and made a preliminary conceptual exploration of "artificial intelligence consultation literacy" to bridge the gap across fields. This article defines bridging a gap: "Between artificial intelligence and consultation, be aware of the similarities and differences in their respective professional fields, and make connections or reduce the differences between the two. To strengthen the artificial intelligence

literacy in the field of consultation and respond to the consultation needs in the artificial intelligence era." Based on the above thoughts on practical work in consultation, we proposed an exploration of the meaning of artificial intelligence consultation literacy as a reference in the counseling field—a concern for future development in the era of artificial intelligence.

II. The meaning of literacy

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2004) initially understood "literacy" as a set of reading, writing, and calculation skills, a person's ability to know what they read, and can write and state about their daily life. On the expansion of the meaning of "literacy," it is further proposed that "literacy" is not only the connection between personal realization and social life but also affected by culture, history, language, religion, and socio-economic conditions, emphasizing that "literacy" is not a unified concept, but is deeply influenced by culture and language. Through visualization and digitalization, people can communicate and express themselves through various media. It is also a continuous learning process to develop personal learning and potential. Achieving personal goals and investing in community and social life shows that "literacy" has a more multifaceted meaning. Even in the development process of time, it dynamically presents diversified purposes and can also be understood as a social construct—patterns of communication relationships.

Domestic discussions on the meaning of "literacy" mainly refer to two English words: literacy and competency, which is generally translated as "literacy." However, English competency and literacy are different from Chinese abilities and literacy. The ambiguity in translation has caused confusion between the correspondence and referential relationships between Chinese and English. It shows that when various fields talk about "literacy," they interpret it in the context of thinking of their respective fields so that the meaning of Each has its differences (Yang, 2018). Tsai (2011) once clarified the differences in the academic understanding of "literacy," "ability," "knowledge," "literacy," and "competency," emphasizing that "literacy" can make up for the lack of "knowledge." However, having only "knowledge" leads to the shortcoming of "literacy," which shows that "literacy" does not only refer to knowledge and ability but should have a broader connotation. Yang (2018) pointed out that domestic scholars believe that "素" has a general and ordinary meaning, while "養" means cultivation and cultivation. They refer to "素養(literacy)" as "the cultivation that everyone should have, "similar to English literacy. There is still a clear gap in meaning between literacy

in a narrow sense and literacy in a broad understanding, including a person's education status and general skills.

Based on the discussion on the use of "literacy" in Chinese and English words and its meaning, this article is not to conduct research on semantics and give a standard answer but to explain that "literacy" needs to be understood in different contexts and different concepts. Clarify and understand to facilitate further exploration of this article. At this point, we can understand that the meaning of "literacy" or "competency" jointly refers to the meaning of literacy, ability, or knowledge. It is not only the ability to read and write but also a communication relationship. In response to the rapidly changing environment of artificial intelligence, big data, and biotechnology, the Organization for Economic Co-operation and Development (OECD, 2018) has re-thought "literacy" and integrated knowledge, skills, attitudes, and value listed as the three main connotations of "literacy," highlighting that "literacy" is not just the acquisition of knowledge and skills, but also includes the mobility of knowledge, skills, attitudes and values in situations that respond to the complex needs of changing times (mobilization). Therefore, the general exploration of issues related to "literacy" focuses on three aspects: knowledge, skills or abilities, and attitudes (Alexander, 2018; Chen, 2020; Henrich, 2021; Long & Magerko, 2020; Wang, 2020).

III. Discussion on artificial intelligence literacy

1. The meaning of artificial intelligence

"Artificial Intelligence" (AI), also known as artificial intelligence, the term originated from the ten-person seminar on artificial intelligence organized by McCarthy et al. (1955) at Dartmouth College. This is the original origin of the concept of artificial intelligence, which assumes that machines can process any learning field related to human intelligence to complete precise calculations. The main research is to make machines as intelligent and capable of abstract thinking as humans. Machines know how to use language and can do the same things as humans, and the machines have the function of self-improvement to help humans solve various problems. However, the discussion on artificial intelligence at the Dartmouth Conference did not bring any new breakthroughs and was only the beginning (Russell & Norvig, 2011).

Early research on the definition of artificial intelligence continued to explore the idea that computers have automation capabilities advocated by McCarthy and others to create machines

that can perceive, reason, and act, just like humans with thoughts and thinking capabilities, thereby assisting humans in making rational decisions. Solving human learning problems (Bellman, 1978; Haugeland, 1985; Rich & Knight, 1990). Recent research on the meaning of artificial intelligence slightly differs from the artificial intelligence claimed by early research. The reason is that after the popularization of computers, artificial intelligence places more emphasis on computer program operations and the use of algorithms for data processing and analysis (Chao et al. al., 2021; Domingos, 2015; Marr, 2018; Shubhendu & Vijay, 2013), is a technology that has the ability to think logically and behave, helping humans solve problems and make decisions (Chen & Wen, 2020; Wang, 2020). Floridi (2016) further pointed out that most current researchers' requirements for the design of artificial intelligence machines have increased to the point that they are no longer similar to humans but that machines can handle complex problems through automated systems.

The definitions of artificial intelligence in domestic and foreign literature are almost the same. The earliest assumption is to make machines have the same thinking and behavioral capabilities as humans, mainly to solve human life problems. In recent years, the definition of artificial intelligence has shifted towards machines that can be fully automated and no longer follow human-like patterns. From the past few decades to now, professionals from different disciplines have also provided their own definitions of artificial intelligence, and there is still no consensus among various professional fields (Chao et al., 2021; Wang, 2020). Although humanity is already in the era of artificial intelligence, there is still a need to explore the universality of the meaning of artificial intelligence and its applicability to various disciplines.

2. Related research on the concept of artificial intelligence literacy

Artificial intelligence has changed contemporary communication, work, and lifestyle. Communication is no longer limited to people-to-people communication but also includes communication between people and machines. Although the traditional interpretation of "literacy" in reading, writing, and numeracy is not sufficient to meet the learning needs in the era of artificial intelligence, in recent years, the definition of relevant skill sets in various subject areas has also incorporated the concept of reading, writing, and numeracy. Develop the concept of literacy into a broader meaning as a way to expand access to knowledge and strengthen the ability to share and exchange ideas with others to cope with the new era of artificial intelligence (Long & Magerko, 2020; Ng et al., 2021).

After conducting an exploratory literature review, Long and Magerko (2020) explored various interdisciplinary fields related to artificial intelligence. They derived sixteen ability

indicators of artificial intelligence literacy in a thematic manner, which served as the framework of the concept of artificial intelligence literacy. , and calls this set of abilities for human-machine communication "artificial intelligence literacy," conceptualizing it as individuals being able to critically evaluate AI technology, communicate and collaborate effectively with AI, and apply artificial intelligence online and, at home and in the workplace, becoming a tool for work. In defining the concept of sixteen artificial intelligence literacy capabilities, Long and Magerko (2020) pointed out that digital literacy (digital literacy) is a prerequisite for artificial intelligence literacy because individuals need to know how to use computers to understand artificial intelligence. Ng et al. (2021) further conceptualized artificial intelligence literacy based on Long and Magerko's discussion of artificial intelligence literacy, advocating that the cultivation of artificial intelligence literacy should be based on the definition of traditional literacy and understanding the knowledge of artificial intelligence, the application of artificial intelligence, and artificial intelligence. The four aspects of wisdom evaluation ability and the ethics of artificial intelligence, as the conceptual framework of artificial intelligence literacy, introduce "people-oriented" thinking into the mastery of digital literacy, knowledge, and skills that artificial intelligence literacy emphasizes.

In terms of the view of human nature, Long and Magerko (2020) explained that artificial intelligence literacy is different between human, animal, and mechanical. The core reminder for artificial intelligence literacy is that it is first necessary to understand that artificial intelligence has a human role. Understanding artificial intelligence is not only a way of learning from data, but humans should also maintain a critical perspective and interpret the data analyzed by computers instead of completely relying on the face value of the data obtained by the computer system. Ng et al. (2021) emphasize that contemporary artificial intelligence literacy lies in the mastery of the knowledge level of artificial intelligence, which is used to understand the essential functions of artificial intelligence and the high-order thinking skills of artificial intelligence applications and to apply artificial intelligence to daily life. On different occasions, more attention is paid to fairness, accountability, transparency, and ethics-related issues of artificial intelligence. The conceptualization of artificial intelligence literacy by Long and Magerko (2020) and Ng et al. (2021) not only refers to computerization or mechanization but also an issue of human daily life and is closely related to communication skills, jointly pointing to the development of artificial intelligence in the era of artificial intelligence—humane and ethical considerations.

Domestic research on artificial intelligence literacy is based on the field of education, focusing on developing artificial intelligence literacy scales and making operational definitions of artificial intelligence literacy. Chen Xiyu (2020)'s definition of artificial intelligence is divided into three aspects: "knowledge," "ability and skills," and "attitude." It pays more

attention to the user's mastery of the knowledge and ability of artificial intelligence and focuses on the user's attitude. Mainly interested in and values of artificial intelligence. Wang (2020) differs from the generally referred to artificial intelligence literacy that emphasizes knowledge and abilities. He proposed the perception of artificial intelligence and advocated that artificial intelligence literacy must include empathy, patience, team communication, and the ability to cooperate with others. Artificial intelligence combines cross-fields like driverless cars, Siri, and AI judges. Different fields communicate with each other, provide expertise in their fields, and jointly complete artificial intelligence. Therefore, artificial intelligence literacy is collectively constructed as "artificial intelligence." Perception", "Attitude towards cross-domain cooperation," and "Artificial Intelligence Adaptability."

To sum up, relevant discussions on artificial intelligence literacy at home and abroad mainly from three aspects: AI knowledge, AI skills, and AI attitude (Chen, 2020; Wang, 2020), showing that when humans use artificial intelligence, in addition to having data The concept of literacy, "people-centered", can be used as a basis to preserve human critical thinking and promote effective communication and cooperation in daily life through the assistance of artificial intelligence (Long & Magerko, 2020; Ng et al., 2021).

IV. Discussion on counseling literacy

1. The meaning of counseling

Regarding the meaning of "counseling," the American Psychological Association (APA, n.d.) defines counseling as a professional relationship. The British Association for Counseling and Psychotherapy (BACP, 2021) defines counseling and psychotherapy as a general term covering all talk therapies. Counselors must have professional capabilities and focus on the cooperative and diligent relationship between counselors and clients through talk therapy. In addition to still focusing on counseling as a relationship and process, the contemporary definition of counseling emphasizes the parties' satisfaction with life to make life richer and better (BACP, 2021) rather than just solving life problems. McLeod (2009) believes that the reason why counseling has many different meanings is that counseling has emerged following changes in contemporary society and has evolved very rapidly. In the era of artificial intelligence, the evolution of the definition of counseling is inevitable. How can we add the concept of artificial intelligence to counseling literacy and reinterpret it so that professional abilities in the counseling field can achieve counseling with the assistance of artificial

intelligence? The core spirit and function of the system allow patients to explore and understand themselves to achieve optimal development, enrich their lives, and make them more satisfied with their lives. This is an issue worth discussing.

2. The meaning of counseling literacy

In the field of counseling, counseling skills, namely "competency," are generally referred to as counseling knowledge, counseling skills, and counseling attitudes (Alexander, 2018; Henrich, 2021; Sue et al., 1992; Swank & Lambie, 2016; Tate et al., 2014). This article mainly explores the three aspects of knowledge, ability, and attitude formed by the "literacy" used in artificial intelligence literacy, conceptualizes "counseling literacy," and believes that "ability" and "skills" are included in "literacy" Within the meaning of "literacy," counseling competency" is listed as one of the three aspects of counseling literacy. The other two aspects are "2. The meaning of consultation literacy

In the field of counseling, counseling skills, namely "competency," are generally referred to as counseling knowledge, counseling skills, and counseling attitudes (Alexander, 2018; Henrich, 2021; Sue et al., 1992; Swank & Lambie, 2016; Tate et al., 2014). This article mainly explores the three aspects of knowledge, ability, and attitude formed by the "literacy" used in artificial intelligence literacy, conceptualizes "counseling literacy," and believes that "ability" and "skills" are included in "literacy" Within the meaning of "literacy," counseling competency" is listed as one of the three aspects of counseling literacy. The other two aspects are "counseling knowledge" and "counseling attitude," which form a preliminary study on the conceptualization of "counseling literacy." Therefore, this article uses counseling literacy to refer to "counseling literacy" and continues to use "competency" to refer to "counseling ability" in the field of counseling to distinguish it from "counseling literacy" in terms of vocabulary and meaning.

First, "counseling knowledge," psychodynamic orientation, experience and relationship orientation, cognitive behavioral orientation, systems perspective, and postmodern orientation are generally used as the central knowledge base of counseling and psychotherapy theory (Corey, 2013). Counseling knowledge in each theoretical school has the same or different views on human nature, philosophy, treatment goals, intervention techniques, and limitations.

For a professional counselor, a good counseling theory is compatible with their philosophy of helping others, allowing the counselor to communicate with the client, assist in developing interpersonal relationships, implement professional ethics, and How counselors view their

profession (Gladding, 2004). In terms of the definition of counseling, counseling is a process involving interpersonal relationships (Patterson, 1985). In the interaction process between counselors and clients, counseling theory can be said to be a conceptual map of a case, becoming the counselor's guide to the client—the basis for the parties to make assumptions about the problem to formulate a solution to the problem. In terms of counselors' recognition of their profession, Guindon (2011/2012) proposed that the most basic requirement for counseling knowledge is the generally set knowledge standards, which must comply with the majors in eight core curriculum areas, namely professional orientation and ethical practice, Society and Multiculturalism, Human Growth and Development, Career Development, Helping Relationships, Group Work, Assessment, Research and Program Evaluation. The reason why counseling knowledge is listed as the first aspect to be explored is that counselors are familiar with various counseling theories and can use counseling knowledge to help clients solve personal issues or life problems without violating their internal consistency.

In terms of "competency," Kaslow (2004) proposed that "competency" is derived from experts and is flexible, observable, measurable, and controllable. Containable and practical, it clarifies the meaning of "ability" in professional psychology. It consists of knowledge, skills, and attitudes, is necessary for professional practice, and can be improved through training and development. Domestic scholars pointed out that "counseling ability" refers to the general, universal, and essential professional ability of counselors engaged in counseling work (Liu, 1999), and skilled or professional abilities usually include knowledge, technology, and attitude. The integration of the three becomes necessary for experienced practitioners (Lin & Huang, 2013).

Lin and Huang (2013) pointed out that there is currently no empirical research on competency indicators for counseling psychologists in China, only research on similar topics. Early domestic scholars pointed out that the literature on the developmental supervision model that focused the most and described the most systematically on the development of individual counseling abilities of counselors was related to the development of individual counseling abilities in terms of process skills and concepts. Skills, personal skills, and professional behaviors were sorted out, and six dimensions were obtained through Huaide's survey, which serves as the structure of consultation capabilities, namely professional behaviors, process skills, concept formation skills, personal skills, personality tendencies, and theories Basics (Liu & Wang, 1995). Mcleod (2009) summarized the classification and segmentation of consultation ability aspects into interpersonal skills, personal beliefs and attitudes, conceptualization abilities, personal self-awareness, technical proficiency, and understanding of social systems.

The competency index of counseling psychologists proposed by Lin and Huang (2013) includes six competency indicators. The first three indicators are diagnostic and conceptualization ability, intervention ability, and consultation ability, summarized by Liu and Wang (1995) and McLeod (2009), added research and evaluation capabilities, supervision capabilities, and management capabilities to the meaning of counseling capabilities, pointing to the need for counselors to have more comprehensive counseling capabilities.

Recent discussions on counseling abilities have pointed out that counseling abilities are a set of skills that counselors must possess when providing counseling services (Setiyowati et al., 2019). Gladding (2004) believes that counselors need to use counseling skills, such as changing perceptions, leading, multi-focused responding, accurate empathy, self-disclosure (self-disclosure, immediacy, confrontation, contracting, and rehearsal to allow clients to see their lives differently and think, feel, and act accordingly to do make changes. Hill (2006) proposed that consultation skills generally include encouragement, restatement and rephrasing, summary, interruption (conversation), integration, questioning, confrontation, etc. BACP (2020) broadly defines counseling capabilities as the knowledge, skills, abilities, behaviors and attitudes required to use counseling skills safely and effectively in relevant professional roles and environments. Business skills are a combination of values, ethics, knowledge and communication skills used to support the emotional health and well-being of others. It is divided into five competency indicators, namely professional background, empathy, skills and techniques, working alliance and personal qualities.

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In terms of "counseling attitude," Guindon (2011/2012) pointed out that counselors must convey an attitude of respect, acceptance, care, and warmth through actions, especially a focused attitude, dedicated listening, and understanding of the case. , and show the counselor's empathy. Empathy is a counselor's personality trait. It shows the attitude of a counselor and is also a counseling skill. Mcleod (2009) believes that a counselor's personal attitudes, beliefs, and values need to be supplemented by the counselor's ability to self-awareness and be integrated into the counseling process. At the same time, they can learn from the experience

and perception of the case to establish a relationship with the case. The experience is together. Lambie et al. (2018) listed empathy, caring, respect, and compassion as assessment items regarding counseling attitude. Based on the comprehensive discussion of the meaning of counseling knowledge, attitude, and ability, the meaning of counseling knowledge and ability includes the display of counseling attitude, such as repeated mentions of empathy, personal beliefs and attitudes, etc. Therefore, counseling attitude can be said to be a combination of counseling skills and counseling knowledge and is the best way to demonstrate the quality of a counselor.

Counseling is a process in which people influence people. The priority is the relationship between people. The counselor and the client must form a therapeutic or working alliance. Compared with specific theoretical counseling knowledge, it is even more critical than the counselor. Characteristics can bring more positive therapeutic effects (Corey & Corey, 2016). Regarding ability or attitude, the core conditions for effective relationships established by Rogers (1961) are still adopted: empathy, respect, sincerity, acceptance, and an unconditionally positive, caring attitude displayed by the counselors. To achieve a trusting relationship with the client, effective counseling depends on the quality of the therapeutic relationship.

In summary, it can be seen that contemporary counseling literacy comprises three main aspects: knowledge, skills, and attitude. This article also clarifies and organizes the meaning of counseling knowledge, ability, and attitude, forming the origin and discussion of counseling literacy as a conceptual basis for the cross-field combination of artificial intelligence literacy and counseling literacy.

V. Research on Artificial Intelligence and Counseling Perspectives

The era of artificial intelligence is an inevitable trend. However, there have been early studies on the cross-field integration of artificial intelligence and counseling, mainly from the psychoanalytic and cognitive schools. The combination of the school of psychoanalysis and artificial intelligence explores the foundation of the vision of applying artificial intelligence to psychological analysis, emphasizing the dehumanization of artificial intelligence and learning from machines, and proposes that artificial intelligence and psychoanalysis can become a new alliance in human spiritual life. In essence, it has a set of principles that can be shared by humans and machines (Turkle, 1988). The school of cognitive psychology has researched artificial intelligence and counseling and found that the operation method of computer program

simulation can effectively affect the design of various counseling systems. In addition to practical analysis of clinical experiments, it can also be used as a systematization of cognitive psychology theory (Brack et al., 1994).

In recent years, research on the combination of artificial intelligence and the field of counseling has been dominated by the cognitive school of counseling theory (Fitzpatrick et al., 2017; Fulmer et al., 2018). The counseling method is an online counseling formed by artificial intelligence products and networks (Bakar et al., 2020; Bharti et al., 2020; D'Alfonso et al., 2017) or an automatic dialogue medium, generally called chatbots. Artificial intelligence chatbot is a software application that communicates naturally with humans, such as Apple Siri, Google Now, and Samsung S-Voice (Oh, 2017). However, research in the field of counseling is based on Chatbots such as Woebot, Medbot, Chatbot, etc. (Bharti et al., 2020), which are mainly used for accurate analysis of emotion recognition (Oh, 2017). They all use Natural Language Processing (Natural Language Processing) through text, graphics, and Voice-enabled applications that provide interaction on the web. Research on Artificial Intelligence and counseling Perspectives

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based on Chatbots such as Woebot, Medbot, Chatbot, etc. (Bharti et al., 2020), which are mainly used for accurate analysis of emotion recognition (Oh, 2017). They all use Natural Language Processing (Natural Language Processing) through text, graphics, and Voice-enabled applications that provide interaction on the web.

As far as the perspective of artificial intelligence and counseling is concerned, it is a cross-field discussion. According to the research mentioned above on artificial intelligence and counseling from early to recent years, it is known that computer-assisted treatment can achieve effective treatment for anxiety and depression symptoms. Develop alternative counseling options (Fitzpatrick et al., 2017; Fulmer et al., 2018). Fulmer (2019) elaborated on the application of artificial intelligence in the field of counseling from four levels of historical, contemporary, near-term, and long-term perspectives, and believed that the three principles required by the counseling profession, namely relationship building, empowerment, And to achieve the counseling goals, a counseling structure can be formed and integrated into the field of artificial intelligence. However, the artificial intelligence counseling structure proposed by Fulmer (2019) is a conceptual inquiry and still requires more in-depth discussion. Domestic discussions on artificial intelligence and counseling also point out that artificial intelligence is gradually becoming popular in human society. In the field of professional consultation and counseling education, how to make good use of artificial intelligence to carry out professional training in consultation to assist in the practice of counseling, it is inevitable to mobilize accordingly (Lin & Hsieh, 2021).

The development of artificial intelligence began with the attempt to develop machines close to human intelligence. The earliest research results found that artificial intelligence and cognitive psychology are currently the most feasible integration. Relevant literature at home and abroad all point out the impact of artificial intelligence on counseling. However, the relationship between "human nature" and "machine nature" will change from the interaction between people to the interaction between people and human-like artificial intelligence. (Lin & Hsieh, 2021; Fulmer, 2019; Long & Magerko, 2020; Turkle, 1988). The human world may face a large number of unknown existential problems. These survival problems or psychological adaptation problems require people who specialize in human emotions and crises, such as counselors, to conduct relevant discussions on how humans and simulated humans interact (Fulmer, 2019).

To sum up, Fulmer (2019) believes that if artificial intelligence is applied in the field of counseling so that artificial intelligence and counseling have their interface, that is the gap referred to in this article will be bridged. First of all, it is necessary to understand how artificial

intelligence has had an impact on the field of counseling, and it is essential to establish mutual respect among different professional fields and initiate cross-field dialogue and cooperation mechanisms. In the field of counseling in the era of artificial intelligence, how can we achieve the integration of artificial intelligence and counseling so that they can coexist? The conceptual gap between artificial intelligence literacy and counseling literacy can be bridged as a framework for cross-field integration. Bridge work has its necessity that cannot be ignored.

VI. Discussion on ethical and social challenges of artificial intelligence counseling

In the era of widespread use of artificial intelligence, giants in product research in the artificial intelligence era, such as Google, Facebook, and Microsoft, have all established artificial intelligence ethics research groups since 2017 when developing artificial intelligence products to serve society. and develop responsible, ethical guidelines for related technologies for economic purposes (Central News Agency[CNA], 2020; Wu, 2020).

The application of artificial intelligence in mental health has potential advantages, including the creation of new psychotherapy models, the opportunity to contact groups that are difficult to reach, and the private space of online models to obtain more ideal responses to individual cases. It also frees up more time for counselors. Fiske et al. (2019) comprehensively assessed the two significant aspects of ethics and social impact in their discussion of converting the three essential fields of psychiatry, psychology, and psychotherapy into artificial intelligence methods. From an ethical perspective, artificial intelligence embedded in the counseling model, especially in psychotherapy, not only involves online counseling ethical issues but also requires more exploration of related ethics and social responsibilities.

1. Ethical issues for counselors using artificial intelligence data

General counseling ethics issues generally refer to the well-being and rights of the parties involved in the counseling relationship. Where counseling are confidential, the parties' privacy rights and best interests will be considered. Regarding ethical issues regarding the use of computers and test data, counselors need to determine whether the computerized system meets the client's needs and whether the client can use and understand the purpose and function of using the computerized system for counseling. In online counseling ethics, it is emphasized that counselors should be familiar with computer network operating procedures, the characteristics of online media, specific interpersonal relationships, and culture on the Internet, and be able to

conduct multicultural counseling. In particular, they should be trained on the clients. Explain restrictions on network security and technology and restrictions on confidentiality of online data (Taiwan Guidance and Counseling Association, 2001). Empirical studies point to the issue of ethics in artificial intelligence, reminding the transparency of computer calculation programs and understanding the long-term impact of artificial intelligence applications on human living conditions and mental illness (Fiske et al., 2019; Knott et al., 2022).

According to UNESCO's annotation on the ethics of artificial intelligence, Liu et al. (2021) pointed out that the field of artificial intelligence is developing rapidly. Still, the legal, social, and ethical environment required to regulate this field is developing very slowly. Artificial intelligence may bring domestic ethical controversies, including eight aspects of military force: workforce replacement, privacy, discrimination, data bias, protection of vulnerable groups, legal liability, and licensing issues (Tseng & Huang, 2021). When discussing the ethics and challenges of artificial intelligence in medicine, artificial intelligence can be used as an auxiliary diagnostic model. Still, the emphasis on the interaction between human care and medical care, as well as the attribution of medical care responsibilities, is the essential core value of the medical community. (Guo, 2021). Foreign ethical issues related to artificial intelligence summarize privacy, employment, misinformation, uniqueness, ethical decision-making, diversity, bias, transparency, and accountability as considerations, emphasizing "human-centered" thinking (Liu et al., 2021; Long & Magerko, 2020), to avoid bias in artificial intelligence applications (Wu, 2020).

In the face of artificial intelligence, the importance of ethical issues is investigated in the face of artificial intelligence counseling ethical and social challenges. According to the big data collection and analysis that artificial intelligence-related research focuses on, it is necessary to establish a considerable amount of data to consult in the development of artificial intelligence. Using artificial intelligence by business people to obtain various data can also bring about ethical issues of information privacy (Tseng & Huang, 2021). The processing process requires "human" intervention and cannot just rely on computer algorithms. Microsoft's internal training proposes the development of artificial intelligence. To avoid potential bias and to assist enterprises in defining responsible artificial intelligence strategies, six principles are proposed, including fairness, reliability, privacy and security, inclusiveness, transparency, and accountability. This is the strategic scope of the official announcement of artificial intelligence ethics (CNA, 2020). ethical and social challenges, the importance of ethical issues is investigated. According to the big data collection and analysis that artificial intelligence-related research focuses on, it is necessary to establish a considerable amount of data to consult in the

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Artificial intelligence has been divided into psychological counseling applications, which have changed traditional counseling. The author was searching for research on the application of artificial intelligence in clinical psychotherapy and learned about "virtual psychotherapists" (Sharma) for dementia care. et al., 2018), social robots developed to deal with autism (Mazzei et al., 2011), robots developed to deal with sexual disorders (Jecker, 2021), and even developed to highly simulate the neurological functions of human infants. The robot model (BabyX) (Knott et al., 2022) integrates the fields of artificial intelligence, psychology, and counseling, mainly artificial intelligence virtual therapists and chat robots, transformed from psychotherapy applications into virtual characters and integrated into the daily lives of users has given rise to another focus on ethical issues, namely the ethical issues of harm prevention (Fiske et al., 2019).

Artificial intelligence is the role of non-human therapy, but does a machine model with human emotional feelings cause emotional harm to artificial intelligence, and does artificial intelligence have the right to survive (Liu et al., 2021)? The current theory of knowledge cannot provide relevant knowledge, mainly on how human emotional behavior operates under the combination of the human brain and artificial intelligence. Therefore, specific challenges that need to be identified and discussed in the application of integrating artificial intelligence and psychotherapy include risk assessment, referral and supervision issues, and the need to respect and protect case autonomy (Knott et al., 2022).

From this point of view, the awareness of ethical issues raised in artificial intelligence-related research in recent years is no longer a one-way exploration of ethical considerations with humans as the primary orientation. Still, in a reverse thinking position, thinking from the part of a simulated robot, with specific Emotional simulation, robots may face real human-like harmful emotions due to their sensitive settings. This reminds developers of emotional machine models that they must bear relevant ethical responsibilities (Knott et al., 2022). In the process of developing artificial intelligence, humans must have moral patience (Danaher, 2019) and pay

attention to the "human-centered" and "humanized" ethical issues of artificial intelligence (Guo, 2021; Liu et al., 2021; Long & Magerko, 2020).

VII. Discussion and Reflection

1. Bridging artificial intelligence literacy and consultation literacy

Overview of the two major fields of artificial intelligence and consultation at home and abroad, and the exploration of related concepts of "literacy" and "ability." In the idea of "literacy," we look for the common and different characteristics of the two fields as a connecting point to carry out Through bridging work, we found that although there are differences in the Chinese and English terms used for "literacy" in the two fields, they both use knowledge, skills or abilities and attitudes as the main three aspects. Artificial intelligence literacy summarizes the three aspects of AI knowledge, AI skills, and AI attitude and is a combination of abilities (Chen, 2020; Long & Magerko, 2020; Wang, 2020). Consultation literacy covers three aspects: consultation knowledge, consultation ability, and consultation attitude (Alexander, 2018; Henrich, 2021), emphasizing the mastery of consultation skills as a demonstration of consultation ability. In bridging the gap between the two major fields, knowledge, ability (skills), and attitude are the three aspects that must be explored jointly in bridging work.

(1) AI knowledge and consultation knowledge

The knowledge level of artificial intelligence literacy is generally known as machine learning, deep learning, natural language, computer vision, and robotics, which are used to simulate the process of human decision-making to improve people's lives (Chao et al., 2021). Counseling knowledge is the process by which counselors provide professional services by mastering relevant counseling information and knowledge resources to provide psychotherapy to clients who come for help to deal with life tasks and goals (Gustad, 1953; Maura et al., 2001).

Long and Magerko (2020) advocate that artificial intelligence literacy is mainly displayed in digital literacy and is basic knowledge that must be possessed. In his monograph on the concept of "digital literacy," Belshaw (2014) first clarified that digital literacy does not refer to a unified view of standardized computer skills learning but needs to incorporate a cultural perspective as the primary element of "digital literacy." In the discussion of artificial intelligence knowledge, in addition to the essential requirement of computer skills learning,

more debate is about integrating the connotation of literacy, ability, and cultural outlook into artificial intelligence, a continuous development process.

In the language of artificial intelligence, the first function of consultation knowledge is to become the basis for identifying cases and providing information to make diagnoses, allowing the cases to understand more about themselves and thereby accept themselves. The second function is for the counselor to identify, obtain, and organize case information through knowledge products, such as books, reports, audio-visual materials, etc. so that the case can achieve self-understanding. The third function is to determine whether the needs of the seeker are met, to evaluate the efficiency and effectiveness of the counseling process, and to implement it in real life so that he can become a happier and more self-efficacious individual in society (Gustad, 1953; Maura et al., 2001).

The commonality between the concepts of artificial intelligence knowledge and counseling knowledge is that by mastering information, the main purpose is to gain more understanding, thereby helping the parties to make decisions and obtain life satisfaction. Artificial intelligence extracts and displays information on data, which is the "digital literacy" emphasized in this field. It focuses on personal understanding and analysis, using data as the basis for analysis; the way of counseling knowledge to grasp information comes from individual cases, and the difference lies in the evaluation method. Artificial intelligence is known for its digital literacy. The validity of the results can be objectively evaluated after computer calculations. The evaluation of counseling is based on whether the parties' needs are met to evaluate its effectiveness, which is a subjective evaluation.

Between artificial intelligence and traditional counseling, "digital literacy" should be used to bridge the gap between the two. Artificial intelligence literacy emphasizes personal analysis of data obtained through computer calculations to increase objectivity in the evaluation process. The field of counseling needs "digital literacy" because it can complement the emphasis in the field of counseling. Whether the client's needs are met is used to evaluate the effectiveness of counseling, which tends to be subjective. And "digital literacy" can increase the understanding of individual cases. Form objective assessment and reduce subjective cognition. Bridging "digital literacy" to the counseling field as a core indicator can form the first step in this article's bridging work on "artificial intelligence counseling literacy."

(2) AI capabilities and counseling capabilities

According to the discussion of artificial intelligence literacy, it is generally considered to be the application of artificial intelligence knowledge in different scenarios, the ability to

identify artificial intelligence technology products, and further distinguish the advantages and disadvantages of products (Long & Magerko, 2020), to determine how humans When using artificial intelligence or human skills is appropriate (Kandlhofer et al., 2016). However, when it comes to emphasizing the digital capabilities of using computer equipment, it is not only necessary to have the ability to read, process, and analyze data (Bawden, 2008) but also to have the ability to critically reflect on the data obtained (D' Ignazio, 2017), while using computer code to express, explore, and communicate ideas (DiSessa, 2001). The relevant operations demonstrating artificial intelligence capabilities combine perceptual abilities, adaptability, and cross-domain cooperation attitudes (Kandlhofer et al., 2016; Wang, 2020). Artificial intelligence capabilities not only refer to the mastery of technology. In the mechanical world of artificial intelligence, cooperation and adaptability are emphasized, and more emphasis is placed on communication and communication skills. Close consultation is the concept of relationship building and cooperative alliance.

The author found that the connotation of "artificial intelligence literacy" emphasizes digital literacy, that is, the ability to use artificial intelligence technology to analyze existing big data or collected case data, which can be used to strengthen the analysis of counseling data and draw more conclusions. Objective treatment planning. And digital literacy also emphasizes communication and communication (Belshaw, 2014), cooperation and adaptability (Wang, 2020); in the field of counseling, individual counseling or group counseling both emphasize skills, evaluation, and cooperation (Lin et al., 2015; Liu & Wang, 1995; Hsieh, 1998). Kalkbrenner (2021) also proposed to add assessment literacy to the assessment ability emphasized in counseling ability, pointing out that assessment literacy is a crucial ability of the counseling profession to conduct objective analysis of individual case tests and scores. In professional counseling, psychological measurement instruments are not fully used because if the professional diagnosis process lacks data to prove, the negative impact of the diagnosis and treatment will be worrying. Therefore, it shows that counselors need the ability of artificial intelligence data learning to obtain objective analysis results.

In the discussion of the literature, it was found that the "digital literacy" proposed by artificial intelligence literacy and the "assessment literacy" proposed by the development of counseling literacy and counseling capabilities can be used as the core connotation of cross-domain bridging work—the second step in this bridging effort. "Digital literacy" and "assessment literacy" both emphasize communication and communication to achieve adaptation and cooperation. Accordingly, they also form one of the three major aspects of

artificial intelligence literacy and counseling literacy, namely "artificial intelligence literacy communication ability," which is the third step in building bridges for this project.

(3) AI attitude and counseling attitude

Regarding the attitude towards artificial intelligence literacy, Wang (2020) proposed that in the era of ever-changing digital technology, multiple perspectives, ideas, and suggestions showing complexity must be adopted in cross-field combinations (Ambrose, 2017), and you can have a cooperative attitude with others. Only those who speak the same language can understand each other (Schulz et al., 2015). Artificial intelligence literacy is not only the technology of programming but also the ability to cooperate with majors in different fields and demonstrate their respective majors after possessing artificial intelligence knowledge. Therefore, The attitude of artificial intelligence literacy means the attitude of being able to cooperate across fields. Ng et al. (2021) further emphasized the need to have a critical attitude towards data in terms of attitudes towards artificial intelligence literacy. They advocated using "people-oriented" as the ideological basis for artificial intelligence literacy.

Regarding counseling attitude, those who help others must have good human qualities. A professional counseling attitude can promote or inhibit the growth of the case and cause changes in the case, mainly through counseling skills such as focused and active listening. , empathy, etc., the client can perceive the helper's respect, acceptance, care, and warmth (Mcleod, 2009; Rogers, 1961; Shen et al., 2010;). Setiyowati et al. (2019) discussed counseling attitudes from a humanistic perspective. They proposed that counselors should possess four counseling attitudes: consistency, unconditional positive regard, empathy (Rogers, 1961), and sincere trust (Corey & Corey, 2016) to strengthen the psychological development of the case and add cultural skills to highlight the quality of counseling.

Based on this, we know that the attitude toward counseling is to become a counselor or a helper. The attitude that one should have is a display of humanity (Rogers, 1961), which is different from the mechanical nature of artificial intelligence. The counseling attitude emphasizes unconditional acceptance and does not adopt a critical attitude toward the client. However, artificial intelligence literacy focuses on maintaining a critical attitude when artificial intelligence performs data analysis (Long & Magerko, 2020). The seventh indicator of digital literacy is also crucial (Belshaw, 2014). This is the extreme difference between artificial intelligence literacy and counseling literacy. The critical attitude advocated by artificial intelligence literacy shows that humans must retain humanistic thinking when using digital technology, while consultation literacy advocates the need to analyze individual cases. Have an

attitude of total acceptance. There is an extreme difference between the two. The critical nature of artificial intelligence can bridge the completely accepting attitude of counseling literacy. Based on this, forming the attitude aspect of artificial intelligence counseling literacy, the "critical attitude of artificial intelligence counseling literacy," is the fourth step.

Using artificial intelligence to explore cultural perspectives, Belshaw (2014) incorporates cultural perspectives into the concept of "digital literacy" as the primary element of "digital literacy." The reason is that personal and social issues are difficult to be considered in the era of technology. Cutting it off, as Wang (2020) proposed in terms of attitude toward artificial intelligence literacy, it is necessary to present an attitude of understanding and cooperation when facing multiple complexity perspectives. Much literature on multicultural counseling has also appeared in modern counseling (Corey & Corey, 2016; Shen et al., 2010). Domestic counseling ethics for online counseling also emphasizes the need for multicultural counseling capabilities in specific interpersonal relationships and cultures on the Internet (Taiwan Guidance and Counseling Association[TGCA], 2001). Corey and Corey (2016) also proposed that for clients of different races or cultural backgrounds, counselors should understand the differences, avoid preset patterns, and show the counselor's respectful attitude towards the clients so that they can communicate with the clients. Bridge the differences between them.

The emphasis on cultural perception in the two major fields has led to the formation of the primary indicator of the knowledge aspect of artificial intelligence. Using artificial intelligence to explore cultural perspectives, Belshaw (2014) incorporates cultural perspectives into the concept of "digital literacy" as the primary element of "digital literacy." The reason is that personal and social issues are difficult to be considered in the era of technology. Cutting it off, as Wang (2020) proposed in terms of attitude towards artificial intelligence literacy, it is necessary to present an attitude of understanding and cooperation when facing multiple complex perspectives. A large amount of literature on multicultural counseling has also appeared in the field of modern counseling (Corey & Corey, 2016; Shen et al., 2010). Domestic counseling ethics for online counseling also emphasizes the need for multicultural counseling capabilities in specific interpersonal relationships and cultures on the Internet (TGCA, 2001). Corey and Corey (2016) also proposed that for clients of different races or cultural backgrounds, counselors should have an attitude of understanding the differences, avoid preset patterns, and show the counselor's respectful attitude towards the clients so that they can communicate with the clients. Bridge the differences between them. The emphasis on cultural perception in the two major fields has led to the formation of the primary indicator of the knowledge aspect of artificial intelligence. Using artificial intelligence to explore cultural perspectives, Belshaw

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This article explores, discusses, and summarizes the relevant literature on artificial intelligence literacy and counseling literacy and discovers the commonalities and differences in the core concepts, meanings, and indicators proposed in the two fields. It can be learned that the counseling profession emphasizes the impact of individual cases on human nature. Explore, understand, and clarify inner feelings, emotions, and cognitions (APA, n. d.; BACP, 2021; Lin, 2005); the design principle of artificial intelligence is to study perception, learning, reasoning, assist decision-making, and take actions to help Artificial intelligence technology for solving problems in the human world (Russell & Norvig, 2011). The common goal of the two professional fields is to solve human life problems. Counseling literacy emphasizes emotional support and forms individual strength, while artificial intelligence literacy emphasizes learning and reasoning, removing human subjectivity, and making decisions based on data and evidence. Suitable decisions to solve life problems. Based on this, this article can understand artificial intelligence This article explores, discusses, and summarizes the relevant literature on artificial intelligence literacy and counseling literacy and discovers the commonalities and differences in the core concepts, meanings, and indicators proposed in the two fields. It can be learned that the counseling profession emphasizes the impact of individual cases on human nature. Explore, understand, and clarify inner feelings, emotions, and cognitions (APA, n. d.; BACP, 2021; Lin, 2005); the design principle of artificial intelligence is to study perception, learning, reasoning,

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Finally, this paper is based on discovering and discussing relevant literature in the two major professional fields. The process of conceptualizing the meaning of "artificial intelligence consultation literacy" is based on the evolution of the five concepts. The steps are briefly described below.

First, the three aspects of knowledge, skills or abilities, and attitudes are used as the basis for the preliminary conceptual exploration of "AI counseling literacy," as shown in Figure 1. literacy as showing digital literacy and evaluation literacy in the counseling process, maintaining awareness of culture and technology, and being critical of the face value of data and evaluation results to achieve cross-field understanding and cooperation to help solve human life problems is divided into three aspects, namely artificial intelligence counseling cultural awareness, artificial intelligence counseling communication ability, and artificial intelligence counseling critical attitude.

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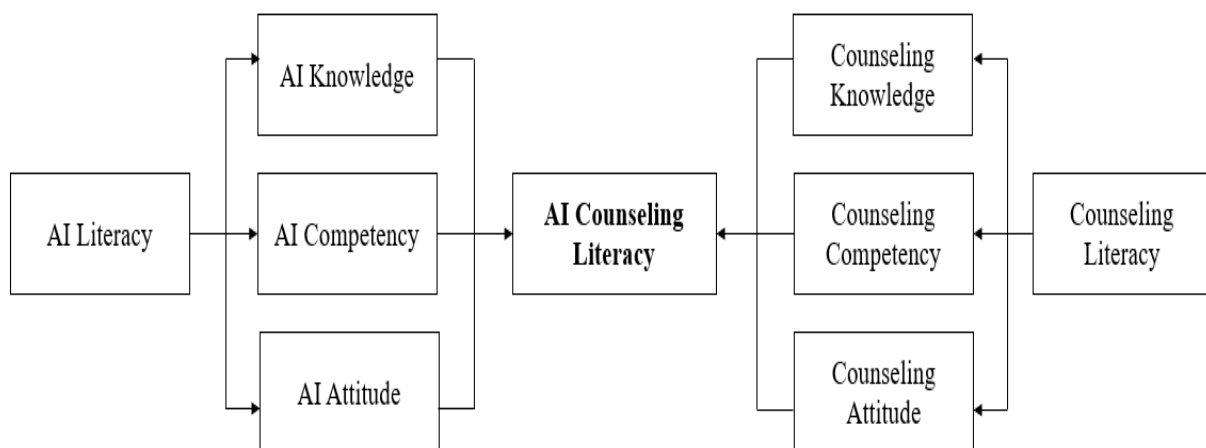
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Figure 1

The Bridge Between AI Literacy and Counseling Literacy

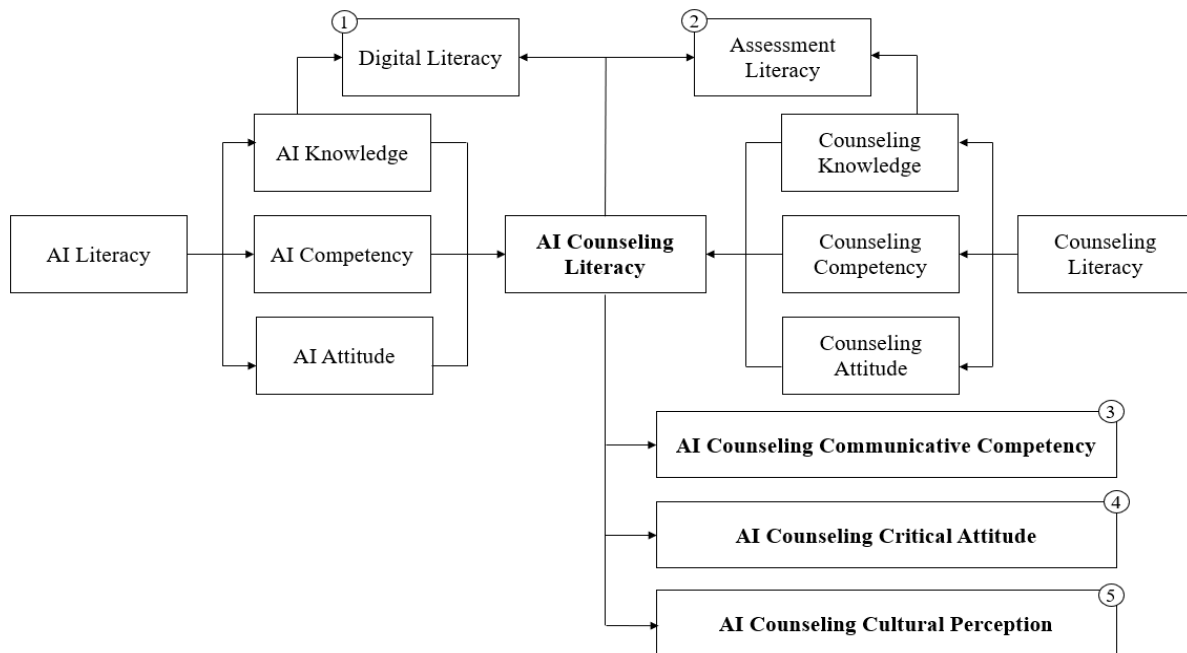


Note: Source: Compiled by the researcher

The five forming steps of the bridging process of conceptualizing the literacy implications of artificial intelligence and counseling are briefly described below and organized as shown in Figure 2.

Figure 2

Bridging the gap between artificial intelligence literacy and counseling literacy



Note: Source: Compiled by the researcher

Step 1: First, take the core of artificial intelligence literacy, that is, "digital literacy," as a bridge to bridge the shortcomings in the counseling field.

Step 2: Take the core of consultation literacy, "assessment literacy," as a way to narrow the gap with the "digital literacy" of artificial intelligence literacy, that is, how to obtain better data from the computer system effect analysis.

Step 3: Take the communication emphasized by artificial intelligence literacy and counseling literacy. Artificial intelligence literacy emphasizes communication between people and data, and consultation literacy emphasizes communication between people. In the exchange and communication between the two, the mechanical nature of artificial intelligence is used to bridge the humanization of counseling, narrow the distance, and form "artificial intelligence counseling communication ability" as a bridge for artificial intelligence counseling literacy.

Step 4: The critical attitude emphasized at the core of digital literacy complements the fully accepting attitude highlighted by counseling literacy. Under extreme differences, as a bridging work for cross-field dialogue, an "artificial intelligence counseling critical attitude" is formed as a bridge for artificial intelligence counseling literacy.

Step 5: Bridging the cultural perspective as the primary indicator of digital literacy with the cultural awareness emphasized in the counseling field is the ultimate goal of this cross-field integration to achieve adaptation and cooperation in response to the communication needs of current life and the future world. Solve human problems and form "artificial intelligence counseling cultural awareness" as the primary indicator of artificial intelligence counseling literacy bridging.

2. The formation of artificial intelligence counseling literacy and reflection on the counseling field

The authors attempt to bridge the gap between the two fields of artificial intelligence and counseling literacy, machine nature and human nature, from the perspective of dialogue between counseling and science and engineering as a preliminary exploration of bridging work. In the process of integrating the conceptual discussion of this article, I know that a counselor should demonstrate counseling knowledge professionally, display counseling skills in counseling ability, and display not only a warm and accepting attitude in counseling but also a warm and accepting attitude. It is even more necessary to have a multicultural counseling attitude and integrate the digital literacy emphasized by artificial intelligence into the counseling field. In response to the digital trend, how to think about Eastern thinking based on the indigenous base among innovations is a research topic worthy of continued discussion. The following are the author's reflections on terminology, professional counseling skills, and counseling attitudes regarding human nature and machine nature.

(1) Reflection on term interpretation and definition and indigenization

The word "literacy" cannot find a fixed English word as a suitable corresponding concept, and the corresponding words in different languages are also different, so there are differences in meaning, such as in English and French (UNESCO Institute for Statistics, 2008). "Competence," a word with the charm of traditional Eastern culture, is given the connotation of conveying Western "competency," but its indigenous meaning is completely forgotten (Yang, 2018; Zhao & Sun, 2017).

Domestic Professor Shu-Ren Jin named "counselor characteristics" as "counselor literacy" and believed that "traits" are static. At the same time, "literacy" has its malleability and is also a term belonging to Eastern culture (Shen et al., 2010), divided into two levels: professional quality and personality quality for observation.

When clarifying the definitions of "artificial intelligence" and "literacy" at home and abroad, or what the literacy of counselors is, we still have to face the problem of appropriate translation of Chinese and English terms in their different cultures and histories. There are different ways of interpretation in this context. Therefore, when bridging the counseling field with other professional fields, we still need to make more reflections based on the oriental characteristics contained in the local culture.

(2) Reflection on the professional abilities of counselors in the era of artificial intelligence

While exploring the issue of bridging artificial intelligence literacy and counseling literacy, the author reflected on how the professional abilities of counselors can adapt to the era of artificial intelligence.

According to recent literature, it can be found that psychology and artificial intelligence are combined to develop machine intelligence to assist patients with emotional conflicts through network applications. Computer-assisted analysis can be performed (Mello & Sauza, 2019), and consultation has also been proposed. Competencies and digital literacy are discussed, and it is advocated that counselors must possess the essential abilities, knowledge, attitudes, and perspectives of digital literacy, handle information or technological expertise, and list digital literacy as a skill that counselors should master to adapt to technological changes. Become one of the indicators of consultation ability (Julius et al., 2020). Yang and Talha (2021) proposed that the big data background in the era of artificial intelligence brings new challenges to school tutoring work. The current literature on the combination of artificial intelligence literacy and counseling advocates that counselors can use AI to collect information, automate the counseling and evaluation process, and make the evaluation results more objective. Artificial intelligence can be used to seek the best results for individual cases' well-being.

The display of artificial intelligence's professional abilities in counseling, whether combined with psychology or in schools, points to the fact that the current field of counseling focuses on counselors' professional skills and their ability to master digital knowledge, such as deep learning, machine learning, natural language, etc., or whether counselors should be able to write programs, which also affects the training system of counseling education. In traditional counseling situations, counselors need to ask questions to understand the case and evaluate the

case based on the amount of information the case is willing to disclose to establish a counseling relationship. However, in the era of artificial intelligence and the popularization of digitization, counseling capabilities are at a premium. The emphasis on conceptualization ability and evaluation ability will also change its operation mode, so counselors need to use the computing power of artificial intelligence to conduct analysis. However, there is still a lack of empirical research demonstrating feasibility or practicality.

Based on the discussion and reflection of the above literature, it can be found that their common proposition is that the professionalism of counselors is no longer just about mastering counseling knowledge, counseling skills, and a fully accepting counseling attitude. In the current progressive process of the artificial intelligence era, with the penetration of new media technology on the Internet, new counseling models are explored to improve the understanding of artificial intelligence, strengthen the training of artificial intelligence capabilities, and allow counselors to learn to use big data model thinking and technology, and learning digital literacy and data management (data management) to obtain scientific analysis are essential components of the professionalization of counseling and counseling personnel in the era of artificial intelligence. The professional field of counseling faces the challenges of the era of artificial intelligence. It is necessary to realize the necessity of artificial intelligence to assist counseling, which is an essential task of the current digitalization of counseling education.

Counseling is a relationship between people, a therapeutic relationship between the counselor and the client (Burk & Steffle, 1979; George & Cristiani, 1986; Kaplan et al., 2014). Artificial intelligence is the relationship between humans and machines. There is a tug-of-war between artificial intelligence and counseling between mechanics and humanity. In the field of mechanical artificial intelligence, what is advocated is to retain humanity from a critical perspective; in the field of counseling, where respect for humanity is the core idea, how to incorporate machinery is advocated. However, whether artificial intelligence or counseling between machinery and human nature, they all focus on developing appropriate communication skills. The main purpose is to help humans develop the ability to make decisions and solve life problems when facing difficulties in life. This is the core purpose of artificial intelligence and consultation literacy. Whether mechanical or human, they all aim to seek the welfare of humanity.

The era of using artificial intelligence, especially in the field of counseling, not only involves the ethical issues of online counseling but also requires more reflection and reflection on the ethics and social responsibilities of artificial intelligence embedded in the consultation model. Therefore, ethical issues should be integrated into the curriculum when planning courses

so that students can have artificial intelligence ethical literacy. Under the reflection of the human nature and machine nature of traditional counseling and artificial intelligence counseling, guidance and counseling personnel must learn and make good use of the products of the era of technology, Internet, media, artificial intelligence, etc., to improve the quality of counseling services and the effect of education and training, and make use of various training and course designs, based on the professional courses of counseling and development education, arrange relevant training of artificial intelligence literacy as an enhancement course, and then arrange AI in counseling and counseling Applying it as an advanced course to improve professional effectiveness in counseling is an urgent challenge.

III. Conclusion

With the advent of the era of artificial intelligence, in response to changes in the information environment, the development of every field must keep pace with the times, especially the counseling field, which is known as the number one and will not be replaced by artificial intelligence. A counselor with artificial intelligence literacy should pay attention to the impact and problems of changes in society, family, and personal lifestyles and psychological adaptation in the era of artificial intelligence and demonstrate in the counseling profession that he can combine artificial intelligence with digital learning. The ability to perform intelligent calculations and use data for evaluation and analysis implements digital concepts and skills in modern counseling, demonstrating the cross-field combination of knowledge, abilities, and attitudes. Training courses on how to implement artificial intelligence in the field of counseling and counseling can never exclude artificial intelligence, learning computational thinking and programming to take root, arousing interest from the shallower to the deeper, developing the correct perception and attitude for using artificial intelligence, and have cross-domain capabilities dialogue and cooperative attitude to cultivate counseling talents in the era of artificial intelligence. A comprehensive review of relevant literature on the concepts of literacy, artificial intelligence literacy, and counseling literacy at home and abroad to establish a bridge between artificial intelligence literacy and consultation literacy in Taiwan and discuss how to bridge the gap in artificial intelligence consultation literacy, to become a mentoring and counseling service. It is a reference for business practitioners and development education institutions in curriculum planning and subsequent related research.[Part of this paper was published at The 4th International Indigenous Social Science Conference and the 5th International Indigenous Counseling Psychology Conference.]

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