

國立臺灣師範大學 110 學年度碩士班招生考試試題

科目：教育心理學

適用系所：教育心理與輔導學系

注意：1.本試題共 3 頁，請依序在答案卷上作答，並標明題號，不必抄題。2.答案必須寫在指定作答區內，否則依規定扣分。

一、教育心理學學術名詞解釋與舉例

- (一) 「instrumental and relativist orientation」名詞解釋(4分)和具體舉例(4分)
- (二) 「self-regulated learning」名詞解釋(4分)和具體舉例(4分)
- (三) 「disequilibrium and equilibrium」名詞解釋(4分)和具體舉例(5分)

二、教育部 2019 年 12 月 3 日公布台灣「國際學生能力評量計畫 2018」(Programme for International Student Assessment, 簡稱 PISA) 的結果:台灣學生閱讀、數學與科學表現皆顯著高於 OECD 之平均。閱讀比前次進步 6 名;數學與科學名次均退後。其中值得注意的是,關於「害怕失敗」的測驗,亞洲國家學生對失敗的恐懼最大,其中台灣學生是全世界「最害怕失敗」的第一名。而在幾乎所有教育系統中,女孩都比男孩對失敗的恐懼更大,而且這種性別差距在表現最好的學生中更廣泛。請回答下列兩個問題:

- (一) 請問這項調查結果透漏了哪些訊息或反映教育現場的那些問題?(10分)。
- (二) 針對前述二、(一)之回答內容,試著從教育心理學的相關理論提出具體有效的改善建議。(15分)。

三、認知取向和行為學派對於學習的看法有所不同,請回答以下 2 個子題。

- (一) 認知取向和行為學派對學習的看法有何差別?(10分)
- (二) 假設你是一位教師,針對班上學業表現不佳的學生,從認知取向和行為學派的觀點,你分別會用甚麼方法來輔導之?請說明理由。(10分)

四、請閱讀以下短文並回答下列 2 個子題。

- (一) 請用 3-5 行摘要本文大意(10分)
- (二) 請你設計一個實驗探討 ViDis 對 K-12 年級的學生可能的閱讀理解效果。需寫出:1.研究問題、2.自變項、3.依變項、4.統計方法、5.預期結果(須以本文訊息為基礎提出預期結果)(20分)

Although increasing evidence indicates that the addition of visual displays (ViDis) contributes to students' learning (Norman 2012; Roberts et al. 2015), findings in the field can be contradictory. For instance, selected studies show presenting ViDis to students, even without corresponding instruction, benefits reading comprehension (Hannus and Hyönä 1999; Mayer and Gallini 1990). However, other researchers (McTigue and Flowers 2011) found students often misunderstand elements of abstract ViDis (e.g., the arrows in a flow diagram). Furthermore, subsequent research concludes that simply providing students ViDis may have no impact on students' learning or could hinder their reading comprehension (McTigue 2009; Brookshire et al.

2002). As such, these researchers recommend more active interventions that focus on the process of learning from graphics rather than manipulating the graphics themselves. Such mixed results also provide few clear guidelines for ViDis instructional use.

Additionally, it is not clear why researchers often derive inconsistent conclusions from graphics. The increasing graphical complexity may partially account for the disparity of findings, such as those in modern texts, in which visuals are rarely presented singularly within a page of linear text (Fingeret 2012). The typical layout of informational texts has undergone recent changes, as evidenced by the advent of more online reading of digital texts. Even traditional print textbooks are less likely to be formatted in a linear arrangement. As such, the majority of informational texts students encounter are increasingly multimodal in nature (Guo et al. 2018; Fingeret 2012). For example, a paragraph on trees may have, not one, but a series of corresponding images, each illustrating a different leaf type. However, the texts used in often-cited research studies from previous decades (e.g., Mayer and Gallini 1990; Hannus and Hyönä 1999) do not mirror such modern texts because researchers traditionally paired linear texts with a single graphic or single graphic per page. Our current work attempts to address this disparity by reviewing only more modern research (from 2002 forward). We work to provide rich descriptions of the types of text and graphics within reviewed studies rather than treating them as a singular construct.

Furthermore, theory and research do not yet provide clear guidance on how to best visually illustrate content across varying disciplines. While specific learning theories, such as dual coding theory (Paivio 1971, 1986), predict visuals to support the learning process, such theories do not predict the specific nature of how visuals and texts should be designed. Meanwhile, researchers also document that adding ViDis in informational text also adds new comprehension challenges for young readers (Slough and McTigue 2010; Roberts and Brugar 2017). When reading visually complex texts, readers must apply multiple literacy skills to select, interpret, and integrate information provided in both the text and ViDis. These processes may lead to cognitive overload during reading, particularly for younger and less skilled readers (McTigue and Flowers 2011; Duke and Bennett-Armistead 2003).

To ensure better cost-benefits of graphics for comprehension, researchers have engaged in establishing graphical design principles (e.g., Mayer 2001, 2006) which could assist teachers in selecting or designing appropriate visuals. For example, such graphical design principles recommend a close alignment of ViDis and the corresponding text (Mayer 2001). However, while empirically based, Mayer's work primarily draws upon highly controlled research with skilled adult readers (i.e., college students) reading technical texts and may not directly apply to younger students or other text genres (McTigue 2009; Sun and Lee 2016). Consequently, limited research

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supports teachers in selecting appropriate visual materials or improving younger students' content-area learning from visuals. Not surprisingly, this gap between research and K-12 reading and instruction has created a situation in which classroom visual graphic instruction (if occurring) is frequently uninformed by research (McTigue and Flowers 2011). As a result, students have often not fully acquired visual literacy skills before being expected to independently make sense of visually dense informational texts (Roberts and Brugar 2017). This disconnect is not the fault of teachers, but reflects an incomplete, or not fully synthesized, research base, which again we aim to partially address in this study. The need for such work is immediate, because even with an incomplete research base, teachers are responsible for content-area instruction which includes many ViDis.

文章摘錄自 Guo 等人(2020) 《*Educational Psychology Review*》