

各年段學生及中、小學教師綜合類防災素養標準 化評量建置與檢測之研究

林明瑞^{1*}、李佩珊²

¹ 國立臺中教育大學環境教育及管理碩士班教授

² 臺中市北勢國小附幼教師/國立臺中教育大學環境教育及管理碩士班研究生

摘要

綜合類災害為五大類災害之一，為各級學校防災教育的重點工作；唯缺乏此類防災素養標準化評量試題，使各級學校教師無法對學生現行防災素養與學習成效進行診斷，據以改善其教學策略。因此本研究編製綜合類防災素養標準化評量，針對各年段學生及中小教師進行檢測之目的，在於了解受測者之綜合類防災素養現況能力、應加強之處，及獲得可有效評量學生學習成效之評量工具，而教師可藉評量結果以調整此類防災之教學內容。本研究發展之綜合類防災素養標準化評量，包含：一般生活傷害、雷擊、海嘯與核災等四類災害試題，乃依據以林明瑞修訂之 101 年防災素養指標為基礎，經過兩次預試檢視試題難度、鑑別度，並經過三次專家審查過程，共編製九份正式問卷題本。對全國八個年段學生與中小學教師，採分層依比例發放問卷，共發出 15460 份問卷，回收 11513 份有效問卷，有效問卷回收率合計 74.5%。依據評量結果，建立評量之常模表及編寫指導手冊。研究結果顯示：受測者綜合類防災素養知識題平均答對率為 0.65，態度與技能題五等第平均得分分別為 4.23、4.18，表示填答者具一定程度的防災素養，而各年段的平均得分則隨著年段提升而下降，最低分多落於大學階段；因城鄉差異因素，參與防災計畫學校之學生得分不因參與防災計畫(大多為偏鄉學校)而優於未參與防災計畫之都會區學校之學生。再者，有災害經歷之師生(尤其是經歷地震與颱洪災害者)得分顯著優於無災害經歷者。比較同批學生接受 98 年與 102 年綜合類防災素養試題之檢測結果，得知 102 年

知識題難度(0.55)比 98 年知識題難度(0.62)，更為適中。

關鍵字：災害防救、防災素養、常模參照測驗、標準化評量

投稿日期：2015 年 12 月 12 日；接受日期：2016 年 10 月 20 日

* 通訊作者

Establishment and Testing of the Standardized Assessment Forms on the Comprehensive Disaster Prevention Literacy of Various Graders and Teachers in Elementary and Junior High Schools

Min-Ray Lin^{1*}, Pei-Shan Li²

^{1.} Professor, Master Program of Environmental Education and Management, National Taichung University of Education

*^{2.} Teacher, Peishih Elementary School affiliated kindergarten of Taichung City;
Graduate student, Master Program of Environmental Education and Management,
National Taichung University of Education*

Abstract

Disaster prevention and rescue education is important for all levels of school education. However, due to the lack of standardized assessment for disaster prevention literacy, school teachers do not have a valid tool to evaluate students' learning outcomes in disaster prevention education. Consequently, there is no reference to be used to improve teaching. The main objective of this study is to compile the standardized assessment forms in order to understand the disaster prevention literacy of students of all grade levels and the teachers in elementary and junior high schools. The contents of disaster prevention literacy assessment emphasize four categories of disasters, including general life injuries, lightning stroke, tsunami, and nuclear disaster. The question items were designed based on the indicators of disaster prevention literacy revised by Ming-Ray Lin in 2012. Item analysis was conducted to examine the difficulty and discrimination of each test item in two pilot tests. The assessment forms were modified again after being reviewed three times by experts. Finally, nine alternative forms of the assessment were completed. The formal large-scale test was conducted with a stratified sample of grade K-12, university students, and teachers in elementary and junior high schools across Taiwan. A total of 15,460 questionnaires were distributed to the selected samples and 11,513 valid responses

were collected, with a total return rate of 74.5%. The assessment manual and the norm tables were established based on the evaluation results afterwards. The results of the study show that the average score for knowledge domain on disaster prevention is 65 on the 100 point scale; whereas, the average scores for attitude and skill are 4.23 and 4.18 respectively on the 5 point scale. The results indicate that the research subjects of this study have reached an acceptable level of disaster prevention literacy. It is also found that the literacy score is negatively correlated with grade level having the lowest score result from university students. Moreover, owing to the differences of urban and rural areas, the students of schools participated in disaster prevention plan do not score better than those of non-participant schools. The students who have experienced disasters score higher than those who never have; and among which, students who have experienced typhoon, flood or earthquake, score higher than those who never have. Lastly, a comparison between the scores of 2009 and 2013 assessment forms for testing the same teachers and students was made. The results reveal that the difficulty of knowledge items of 2013 assessment form is more moderate than that of 2009.

Keywords: disaster prevention and rescue, disaster prevention literacy, norm-referenced test, standardized assessment