Middlesex University London

Middlesex University Research Repository

An open access repository of

Middlesex University research

http://eprints.mdx.ac.uk

Hernández-Padilla, José Manuel ORCID logoORCID: https://orcid.org/0000-0002-5032-9440, Granero-Molina, José, Rosales, Raquel, São Romão-Preto, Leonel, Füge, Kata and Fernández-Sola, Cayetano (2016) Effects of two teaching interventions on nursing students' acquisition of competence in ECG interpretation. Resuscitation, Volume 106, Supplement 1. In: Resuscitation 2016, ERC Congress on Education, 24-25 Sept 2016, Reykjavik, Iceland. . ISSN 0300-9572 [Conference or Workshop Item] (doi:10.1016/j.resuscitation.2016.07.125)

Final accepted version (with author's formatting)

This version is available at: https://eprints.mdx.ac.uk/20983/

Copyright:

Middlesex University Research Repository makes the University's research available electronically.

Copyright and moral rights to this work are retained by the author and/or other copyright owners unless otherwise stated. The work is supplied on the understanding that any use for commercial gain is strictly forbidden. A copy may be downloaded for personal, non-commercial, research or study without prior permission and without charge.

Works, including theses and research projects, may not be reproduced in any format or medium, or extensive quotations taken from them, or their content changed in any way, without first obtaining permission in writing from the copyright holder(s). They may not be sold or exploited commercially in any format or medium without the prior written permission of the copyright holder(s).

Full bibliographic details must be given when referring to, or quoting from full items including the author's name, the title of the work, publication details where relevant (place, publisher, date), pagination, and for theses or dissertations the awarding institution, the degree type awarded, and the date of the award.

If you believe that any material held in the repository infringes copyright law, please contact the Repository Team at Middlesex University via the following email address:

eprints@mdx.ac.uk

The item will be removed from the repository while any claim is being investigated.

See also repository copyright: re-use policy: http://eprints.mdx.ac.uk/policies.html#copy

Important notes:

You **MUST** use this template. If you don't use it your abstract may be rejected.

Do **NOT** enter author and institution information on this form. You will be able to enter this information online when you submit the abstract.

Do **NOT** write outside the boxes. Any text or images outside the boxes **will** be deleted.

Do **NOT** alter this form by deleting parts of it or adding new boxes. Simply enter your information into the boxes. The form will be automatically processed – if you alter it your submission will not be processed correctly.

Title:

Effects of two teaching interventions on nursing students' acquisition of competence in ECG interpretation.

Abstract: (Your abstract must use Normal style and must fit into the box. Do not enter author details)

Purpose: Nurses' ability to recognise patients' arrhythmias could contribute to preventing in-hospital cardiac arrest. Research suggests that nurses and nursing students lack competence in electrocardiogram (ECG) interpretation. The aim of this study was to compare the effects of two training strategies on nursing students' acquisition of competence in ECG interpretation.

Materials and methods: Controlled randomised trial with 98 nursing students. Divided in groups of 12-16, participants were randomly allocated to one of the following 3-hour teaching intervention groups: 1) traditional instructor-led (TILG), and 2) flipped classroom (FCG). Participants' competence in ECG interpretation was measured in terms of knowledge (%), skills (%) and self-efficacy (%) using a specifically designed and previously validated toolkit at pre-test and post-test. *Two-way MANOVA* explored the interaction effect between 'teaching group' and 'time of assessment' and its impact on participants' competence. Within-group differences at pre-test and post-test were explored by carrying out paired *t-tests*. Between-group differences at pre-test and post-test were examined by performing independent *t-tests* analysis.

Results: There was a statistically significant interaction effect between 'teaching group' and 'time of assessment' on participants' competence in ECG interpretation ($F(3,190)=86.541$, $p=0.001$; Wilks' $\Lambda=0.423$). At pre-test, differences in knowledge (TILG=35.12±12.07; FCG=35.66±10.66), skills (TILG=14.05±10.37; FCG=14.82±14.14), self-efficacy (TILG=46.22±23.78; FCG=40.01±21.77) and all other variables were non-significant ($p>0.05$). At post-test, knowledge (TILG=55.12±14.16; FCG=94.2±7.31), skills (TILG=36.90±16.45; FCG=86.43±14.32) and self-efficacy (TILG=70.78±14.55; FCG=79.98±10.35) had significantly improved irrespective of the training received ($p<0.05$). Nonetheless, participants in the FCG scored significantly higher than participants in the TILG in knowledge, skills and self-efficacy ($p<0.05$).

Conclusion: Flipping the classroom for teaching ECG interpretation to nursing students may be more effective than using a traditional instructor-led approach in terms of immediate acquisition of competence in terms of knowledge, skills and self-efficacy. Further research on the effects of both teaching strategies on the retention of the competence will be undertaken.