

## RETRACTED ARTICLE: Robotic coding and 3D printer with STEM activities; the effect of science teacher candidates on STEM awareness and STEM self-efficacy

Hasan Güleryüz<sup>1</sup> · Refik Dilber<sup>2</sup>

Received: 28 March 2022 / Accepted: 20 July 2022 / Published online: 26 July 2022 © The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

The Editor in Chief has retracted this article because the authors have been unable to provide documents confirming that ethics approval or consents to participate were obtained for the study. Hasan Guleryuz does not agree to this retraction. Refik Dilber did not respond to correspondence from the Editor about this retraction.

The online version of this article contains the full text of the retracted article as Supplementary Information.

**Supplementary Information** The online version of this article (https://doi.org/10.1007/s10639-022-11257-4) contains supplementary material, which is available to authorized users.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

 Hasan Güleryüz guleryuz\_hasan@yahoo.com
Refik Dilber rdilber@atauni.edu.tr

<sup>1</sup> Muş, Turkey

<sup>&</sup>lt;sup>2</sup> Atatürk Üniversity, Erzurum, Turkey