

# Evaluation of the stress lab – a video-based tool for prospective physical education teachers

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## 1 Introduction

Prospective physical education (PE) teachers often experience stress.<sup>1</sup> Regarding sources of stress, results of a previous study showed that PE students perceived the occurrence of pupils' discipline and motivational problems and inadequate facilities and equipment more frequently than PE teachers.<sup>2</sup> To prepare PE students to deal with these and other stressful teaching situations, the stress lab was developed based on the transactional stress theory<sup>3</sup> and the taxonomy of gaining competences.<sup>4</sup>

The aim of the present study was to find out whether PE students felt better prepared for handling stressful teaching situations after participating in the stress lab.

## 2 Methods

71 PE students (age:  $M = 21.80$  years,  $SD = 2.60$ ; female: 28, male: 43) were allocated to one of two groups: One group took part in the whole stress lab (e-learning & practical unit, ELPU) and the other group took part exclusively in the practical unit (PU, see Fig. 1). Participants were asked before ( $t_0$ ) and after ( $t_1$ ) participation how well prepared they felt for different stressful teaching situations (see Fig. 2) using an adaptation of a German questionnaire (ABIS<sup>5</sup>) assessing different stressful PE situations (eight items). Data were analyzed using 2x2 ANOVAs (time x group).

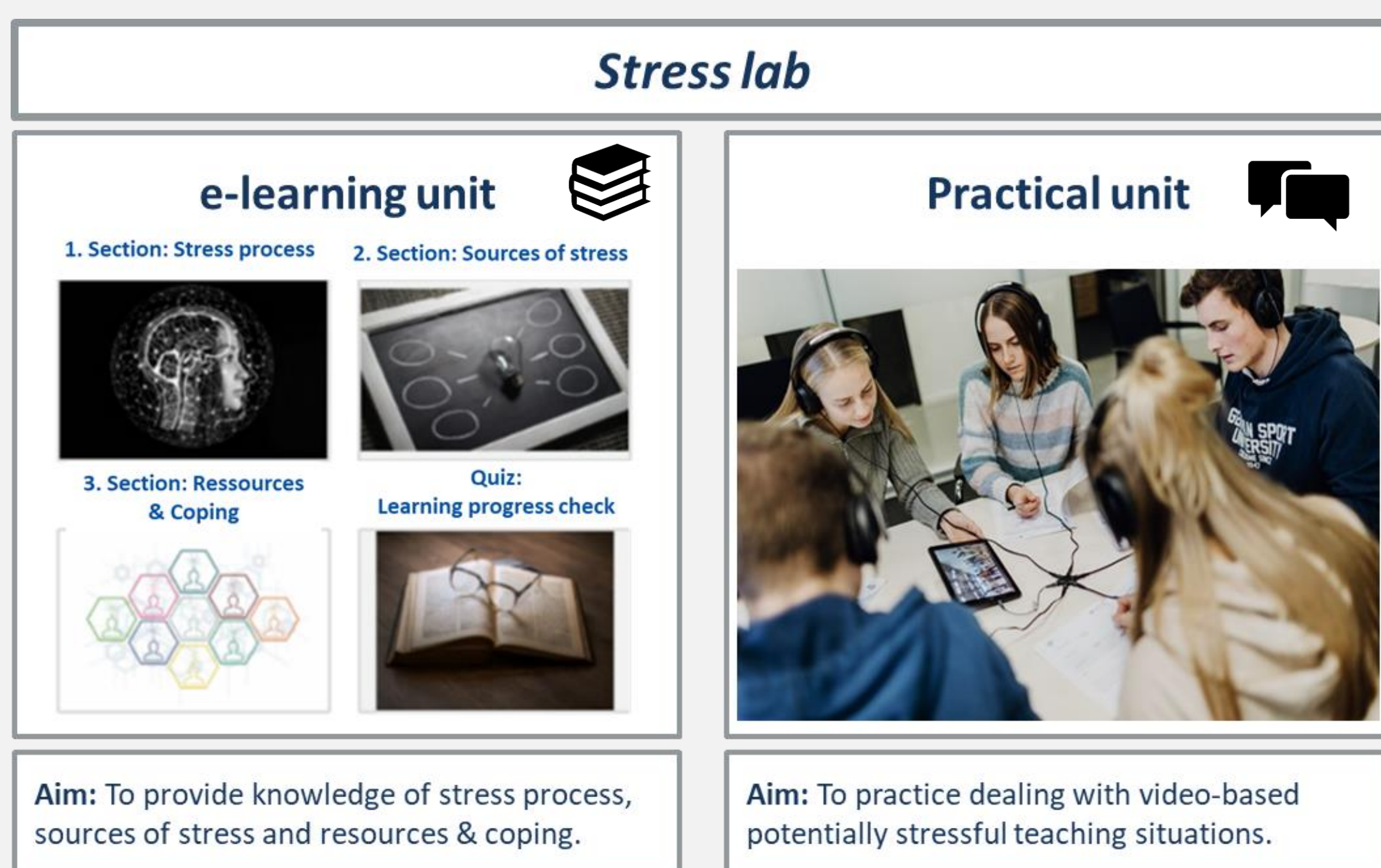


Fig. 1: Structure of the stress lab

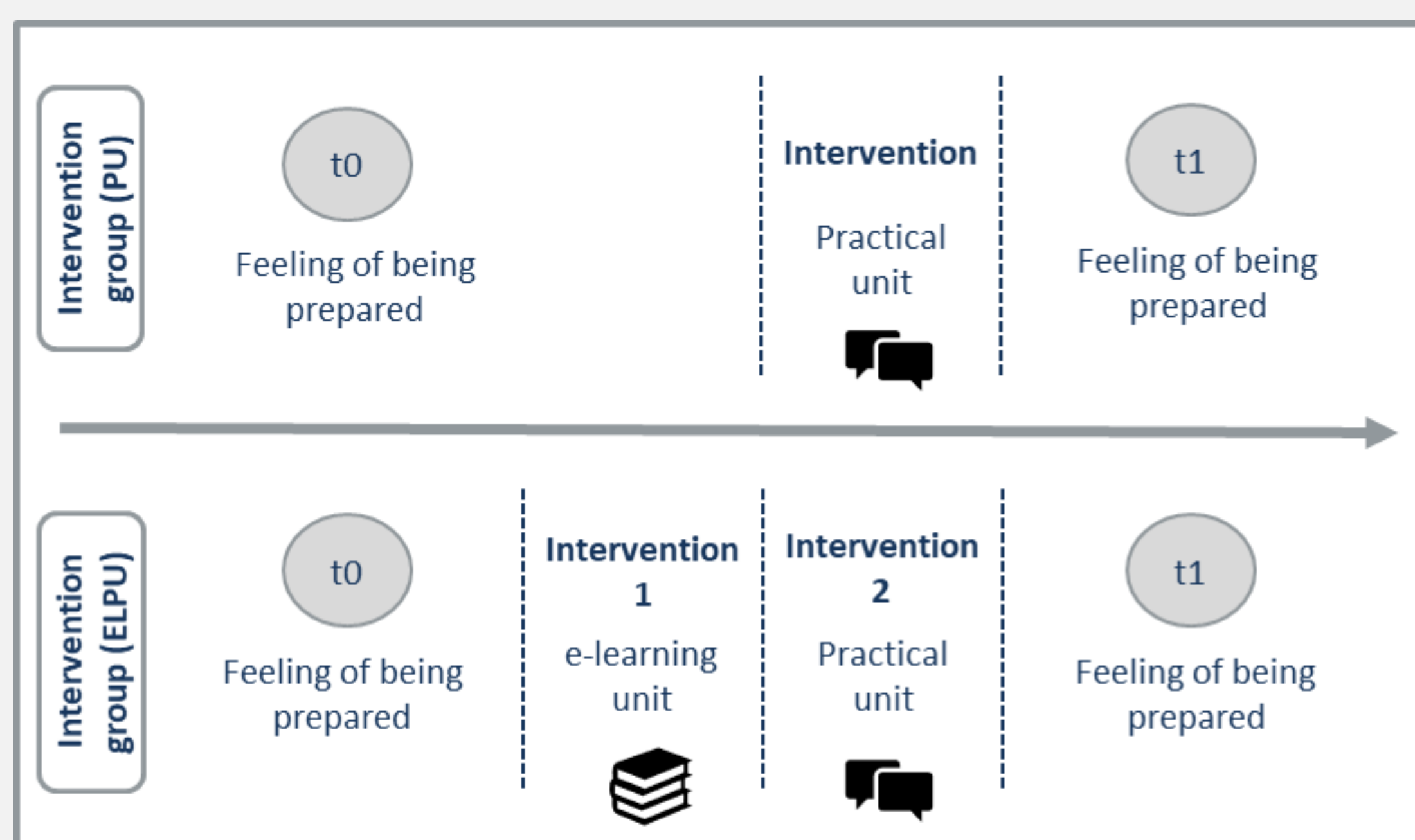


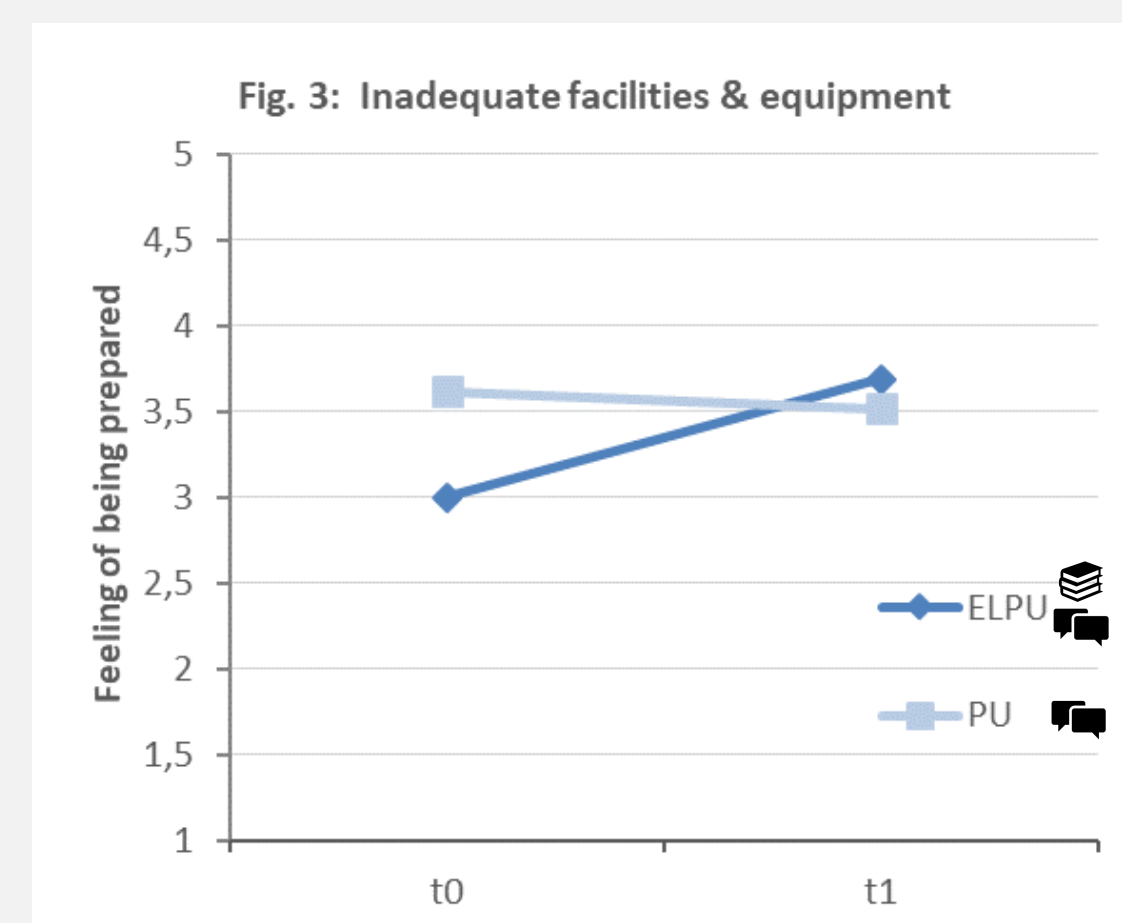
Fig. 2: Design of the study. PU = practical unit, ELPU = e-learning & practical unit

## 3 Results

Results showed a significant change over time for both groups of feeling prepared for:

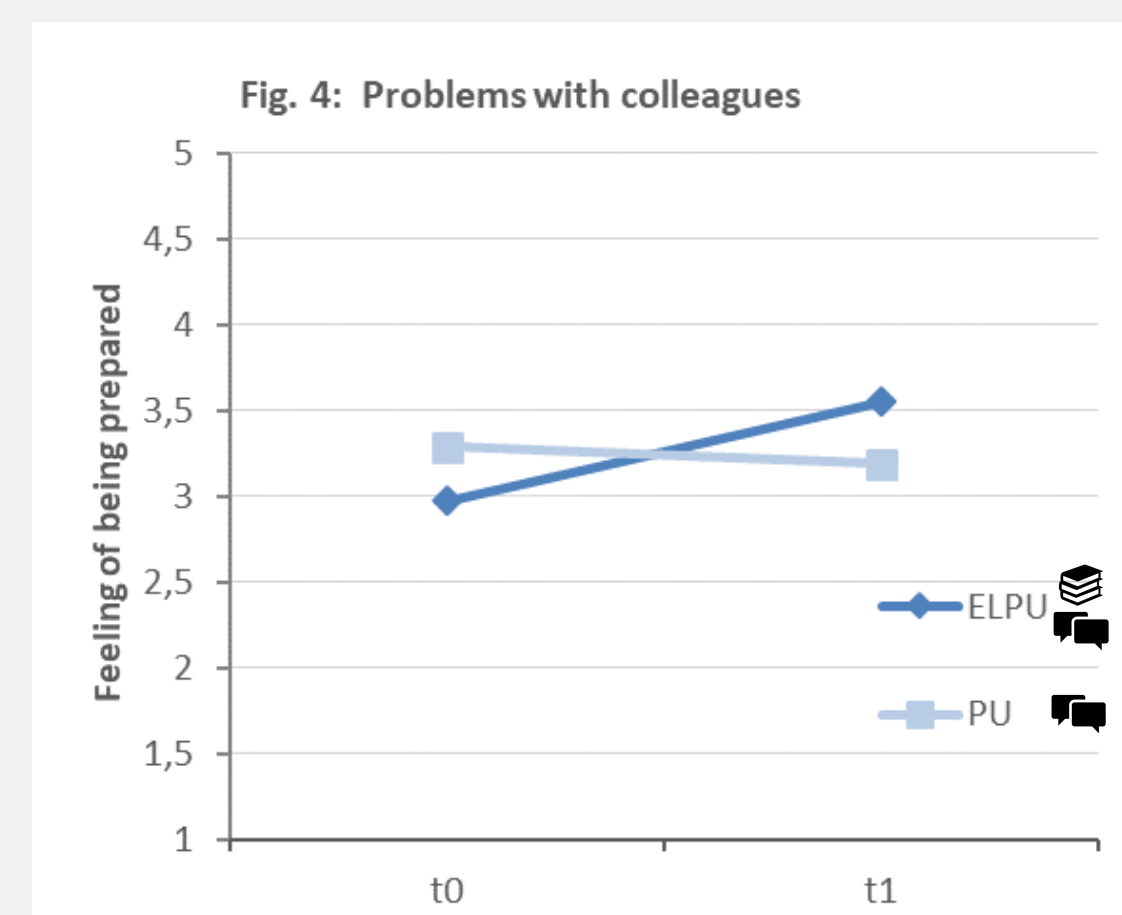
- **pupils' discipline problems** ( $F(1, 69) = 5.84, p = .018, \eta^2 = .08, PU: t_0 < t_1 (p = .030)$ )
- **physical strain** ( $F(1, 69) = 5.87, p = .018, \eta^2 = .08, ELPU: t_0 < t_1 (p = .026)$ )
- **pupils' heterogeneity** ( $F(1, 69) = 12.49, p < .001, \eta^2 = .15, ELPU: t_0 < t_1 (p = .019), PU: t_0 < t_1 (p = .021)$ )

Results showed a group-dependent change over time of feeling prepared for: (from 1 = not prepared at all to 5 = very well prepared)



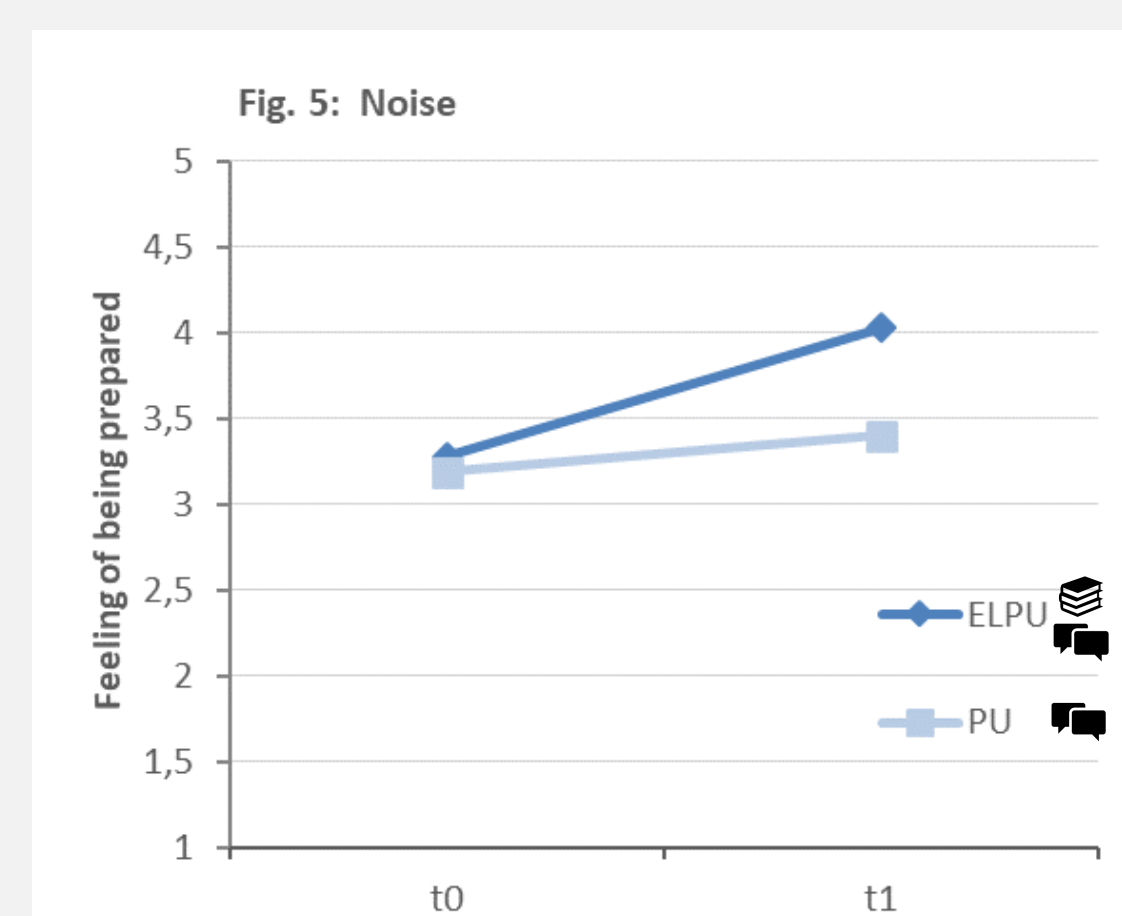
**Fig. 3: Inadequate facilities & equipment**

A significant effect of time ( $F(1, 69) = 6.75, p = .011, \eta^2 = .09$ ) and a significant interaction effect of time and group ( $F(1, 69) = 10.24, p = .002, \eta^2 = .13$ ) was found. The ELPU group showed higher values at  $t_1$  than at  $t_0$  ( $p = .004$ ). At  $t_0$ , the PU showed higher values compared to the ELPU group ( $p = .009$ ).



**Fig. 4: Problems with colleagues**

A significant interaction effect of time and group ( $F(1, 69) = 6.82, p = .011, \eta^2 = .09$ ) was found. The ELPU group showed higher values at  $t_1$  than at  $t_0$  ( $p = .017$ ).



**Fig. 5: Noise**

A significant effect of time ( $F(1, 69) = 19.87, p < .001, \eta^2 = .22$ ) and a significant interaction effect of time and group ( $F(1, 69) = 6.22, p = .015, \eta^2 = .08$ ) was found. The ELPU group showed higher values at  $t_1$  than at  $t_0$  ( $p < .001$ ) and higher values compared to the PU group at  $t_1$  ( $p = .005$ ).

## 4 Discussion

Results showed that PE students felt better prepared for a variety of stressful teaching situations after participating in the stress lab. This suggests that practicing coping strategies enhances efficacy beliefs in PE students for handling stressful teaching situations. Moreover, the interaction effects showed that the benefit was particularly for the ELPU group. The reason could be that the ELPU group received information on stressful teaching situations and coping strategies by additionally participating in the e-learning unit and was subsequently able to apply these in the practical unit.

A limitation of the study is the self-report of the participants, which could be biased (e.g. by social desirability). The stress lab will be integrated into the first phase of PE teacher education trainings to prepare PE students for internships.