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CASE

CENTRE FOR AGEING AND
SUPPORTIVE ENVIRONMENTS

Course development directed at older adults: Lessons learnt from usability evaluations of a web-based course

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Conclusion

Usability evaluations can be beneficial when developing lifelong learning courses, as diversity can be even broader among professionals and late-life learners regarding educational level, previous experiences, and individual differences.

Introduction

Swedish universities are currently investing in lifelong learning courses aimed primarily at professionals but also non-professionals in later life.

However, course development directed at older adults with little or no experience using a digital learning platform or enrolling in a university course involves

several challenges relating to technology use.

Experiences from user evaluations of a new behavioural change intervention delivered as a web-based course (fig 1) can serve as examples of what must be considered when late-life learners are the target group.

Methods and materials

A user-centred iterative design approach characterised the study design, including stepwise refinements after usability evaluations in the lab and the field (fig 2).

THE LAB STUDY

Usability of the online content was tested in two rounds with three experts (e.g., on interaction design) and six persons representing the intended users (≥ 70 yrs). Individual evaluations were conducted in a full-scale model of an apartment, including direct video observation, questionnaires and exit interviews asking about what device they used, general opinions, 'perceived

ease of use', 'perceived usefulness' and other concerns. Participants' feedback enabled course refinement.

THE FIELD STUDY

Eight women (71–84 yrs, $Mdn=75.5$) evaluated the web-based course for usability during the course (weekly online evaluation forms). After the course, interviews were held at home, and the participants also evaluated the perceived usability of the web-based course (a questionnaire consisting of 10 statements on a 5-point Likert scale and one final question about the overall user-friendliness, the System Usability Scale).

Findings

THE LAB STUDY

It proved valuable to use a checklist, including guiding questions based on 10 heuristic design principles supplemented by interviews with three experts. Based on the feedback from the older participants, physical meetings were added to the course to enable further shared experiences and socialising with course participants.

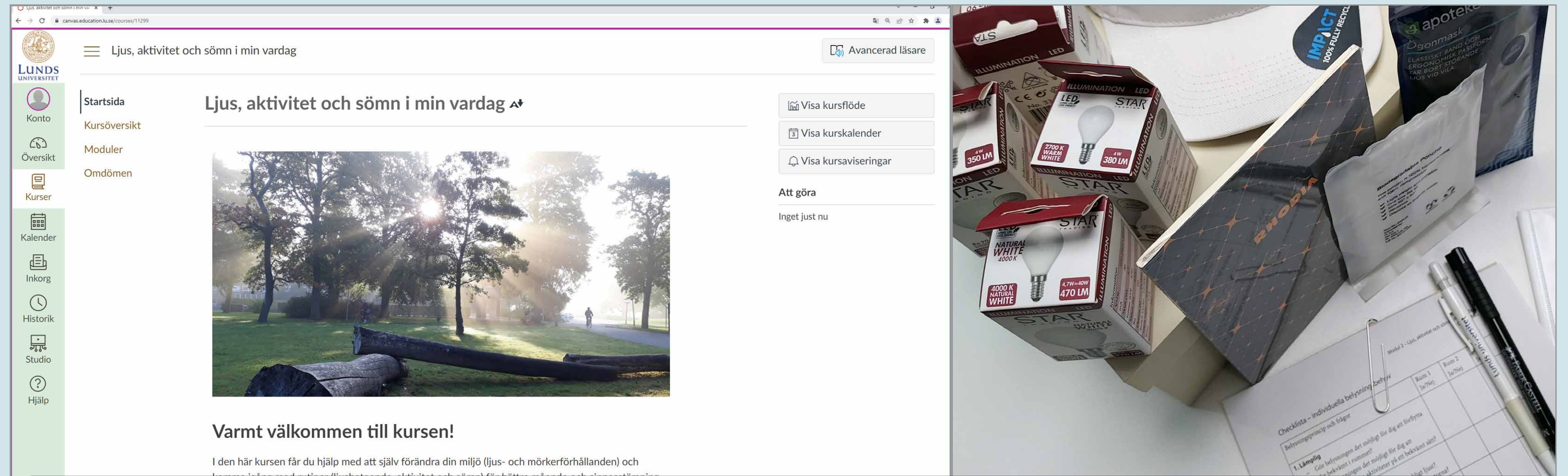
The revised and current version of the course consists of the following learning activity types based on the Conversational Framework (Laurillard, 2002; 2012): *acquisition* (receiving information through reading, watching and listening to course materials provided on the

digital platform), *practice* (improving skills through trying out what the course participants have learned), *production* (applying the knowledge to create a tangible outcome, e.g., a home lighting design), and *discussion and collaboration*.

THE FIELD STUDY

Seven participants' system usability scores were between 90 and 100 out of 100 (fig 3). When interviewed, participants reported overall high satisfaction with what they had learnt.

One suggestion to improve the online delivery was to enable future course participants to add text comments to the weekly evaluation form.



Overview of the behaviour-change intervention 'Light, activity and sleep in my daily life' delivered as a web-based course

Participants learn about ...

Week 1: ... light (reading, completion of an observer-based environmental assessment of light-related features in the home).
Week 2: ... electric lighting (reading, practical exercises).
Week 3: ... daylight (reading, practical exercises).
Week 4: ... the benefits of daylight exposure and physical activity outdoors. They keep a one-week activity diary.

Week 5: ... planning and implementing a walking programme. Preparatory work for the subsequent sleep modules: they keep a one-week sleep diary.
Week 6–9: ... environmental cues for setting the body clock, the sleep drive, age-related changes in sleep, the importance of sleep routines, and using sleep restriction techniques.

Figure 1. Screenshot of the course home page, a test kit to encourage experimentation, and course content of the weekly modules

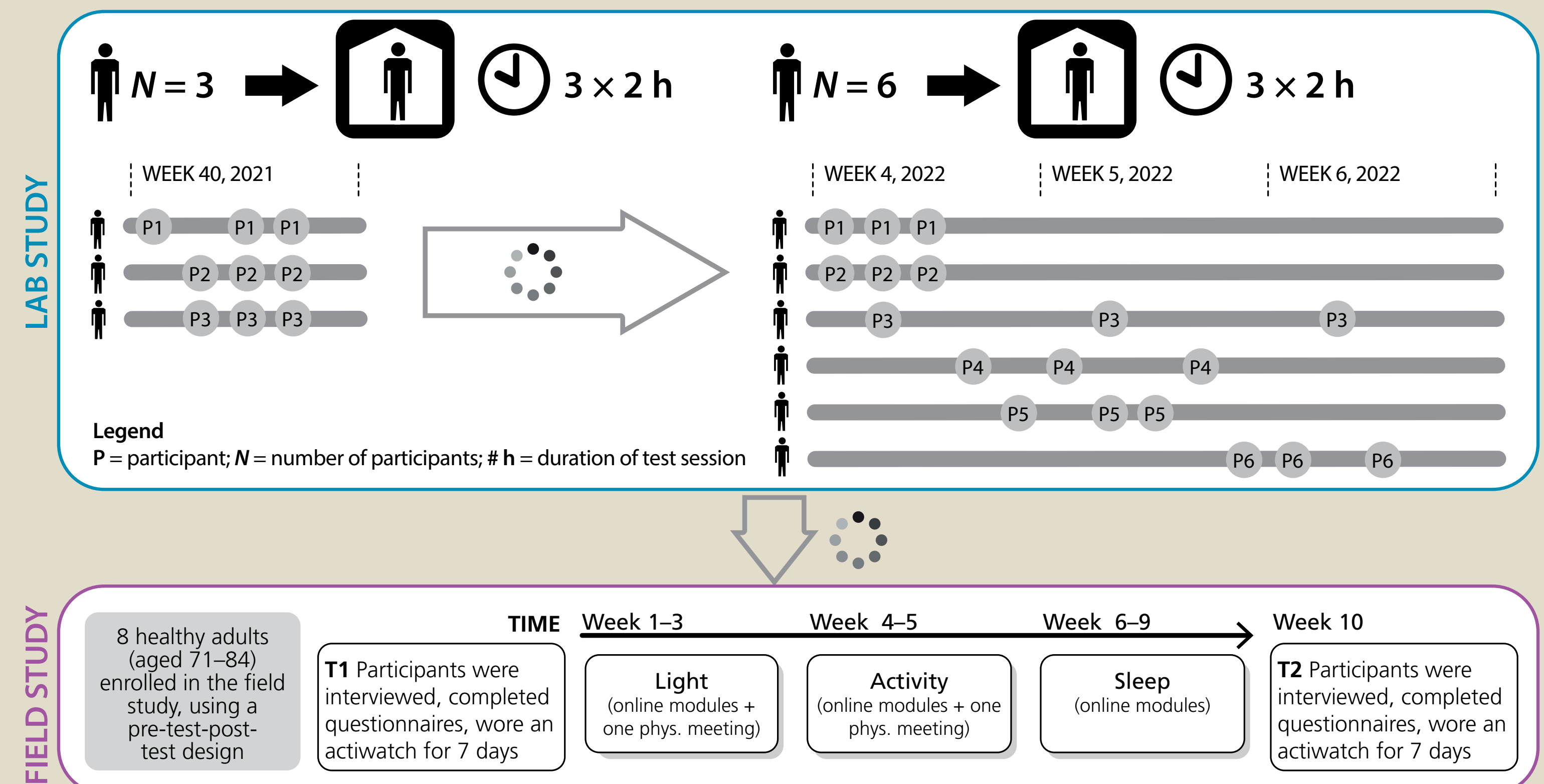


Figure 2. Usability evaluations in two rounds in the lab, refinement of course content and evaluations in the field

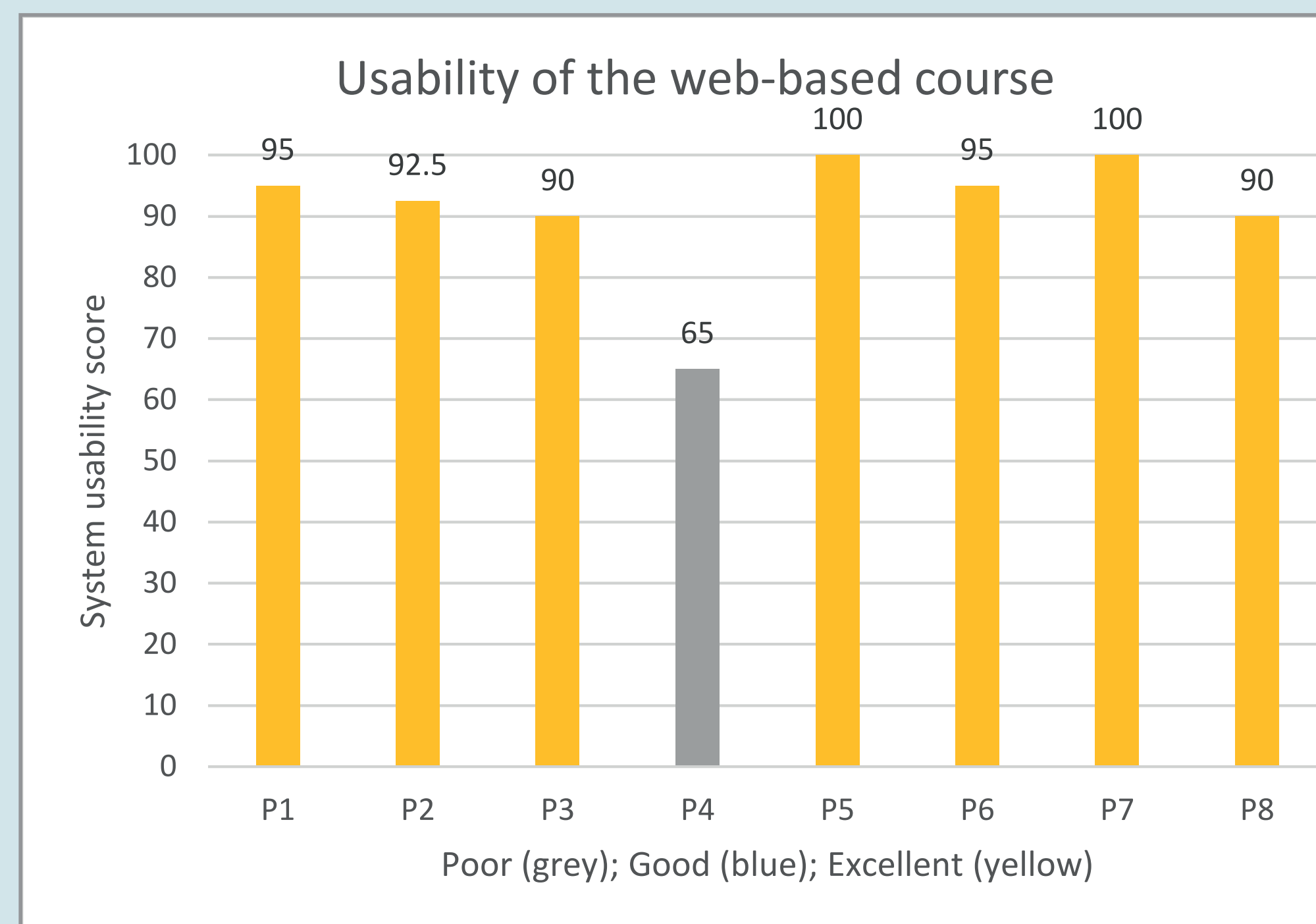


Figure 3. The course participants' system usability scores

