



JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ

The KAPPAS2 project and its key findings

Jani Ursin

KAPPAS2 webinar
September 15, 2026



KAPPAS2 Webinar for Higher Education Institutions

Date and time: September 15, 2026, 1:15–2:45 p.m.

1:15–1:45 p.m.

Welcome and Key Findings from the KAPPAS2 Project

Research Director **Jani Ursin**, University of Jyväskylä

The presentation will provide an overview of the findings of the KAPPAS2 project

(<https://www.jyu.fi/fi/ktl/tutkimus/kappas>). KAPPAS2

examined the generic skills of Finnish university and university of applied sciences students and how these skills develop during higher education studies.

1:45–2:45 p.m.

Teaching Generic Skills in Higher Education: What Can Teachers Do?

Professor **Heidi Hyytinen**, University of Eastern Finland

Generic skills are learnable, but they do not develop on their own. Drawing on research evidence, this presentation brings together concrete ways in which teachers can support the development of these skills both within a single course and across the entire study path.

Introduction



- The efforts of creating European higher education area have paved way to the inclusion of generic skills as part of higher education studies.
 - European Union has, for example, highlighted that professional skills are not sufficient to tackle with the changes in the working life. This also requires acquisition of generic skills which are essential competences needed in the era of digitalisation (European Commission 2019).
- Generic skills are also important during higher education studies.
 - Previous studies have indicated that generic skills have impact on students' learning, study success and retention in higher education (Badcock et al., 2010; Arum & Roksa 2011; Tuononen et al. 2019).
 - Nonetheless, undergraduate students have challenges, for instance, in argumentation, interpreting and evaluating information and drawing conclusions (Badcock et al., 2010; Arum & Roksa 2011; Evens, Verburgh & Elen 2013).
- Generic skills refer to universal expert skills applied across different disciplines and contexts of jobs (Tuononen et al., 2022).
- These skills together with domain-specific knowledge enable students to draw on their field-specific knowledge in a variety of situations (Ursin et al., 2021).



Korkeakouluopiskelijoiden oppimistulosten arviointi Suomessa (KAPPAS2) project aims to

1. Identify the level of generic skills among Finnish HE students.
2. Investigate the factors associated with the level of generic skills.
3. Examine the extent to which these skills develop during HE studies.

Participating HEIs in KAPPAS2



UASs (# of students)

1. Arcada UAS (2730) 
2. Haaga-Helia UAS (10 023)
3. Häme UAS (8955)
4. Jamk UAS (8652)
5. Kajaani UAS (3402)
6. Lapland UAS (6012)
7. Metropolia UAS (17 106)
8. Novia UAS (4746) 
9. Police University College (N/A)
10. Savonia UAS (8073)
11. Tampere UAS (10 941)
12. Turku UAS (12 051)
13. Vaasa UAS (3516)

Universities (# of students)

1. University of Helsinki (26 130)  
 2. University of Eastern Finland (14 376)
 3. University of Lapland (4275)
 4. Lappeenranta-Lahti University of Technology LUT (6630)
 5. University of Vaasa (5091)
- Overall, **5 of the 14 universities** and **13 of the 24 UASs** participated in the KAPPAS2 study.

Generic skills investigated in the KAPPAS2 project



- The adopted **performance-based** Collegiate Learning Assessment (**CLA+**) International test consists of two main sections:
 1. an essay-based performance task (PT, 60 mins), which measures:
 - **Analysis and problem solving** (recognizing a problem situation and providing a well-reasoned solution).
 - **Writing effectiveness** (producing a persuasive text and maintaining coherence in argumentation).
 - **Writing mechanics** (mastery of established conventions in written language).
 2. selected-response questions (SRQs, 30 mins), which measure:
 - **Critical reading and evaluation** (critically evaluating arguments by analyzing logic, assumptions, reliability, and connections or conflicts in information)
 - **Data literacy** (involves making inferences, evaluating methods and assumptions, using evidence to support conclusions, and recognizing when further research is needed)
 - **Critique an argument** (critically evaluate the logic, evidence, and reasoning of a written argument)
- These skills reflect students' proficiency in **critical thinking, problem solving** and **written communication**.
- Through **real-world scenarios**, the CLA+ requires students to analyze information, weigh evidence, and craft reasoned arguments.
- The student completes a **90-minute supervised computer-based test** and then fills out a **background questionnaire**.

Data and methods



- Data
 - A total of **3,379** students participated in the study, including:
 - **2,450** ($n_{\text{UNI}}=336$; $n_{\text{UAS}}=2114$) entering Bachelor's students (1st year)
 - **882** ($n_{\text{UNI}}=78$; $n_{\text{UAS}}=804$) exiting Bachelor's (3rd year)
 - **47** ($n_{\text{UNI}}=35$; $n_{\text{UAS}}=12$) Master's students (5th year)
 - **382** ($n_{\text{UNI}}=26$; $n_{\text{UAS}}=356$) students in the longitudinal study
 - Participation rate **28%**.
 - **Register data:** students' ECTS credits, grades, study start date, and duration of enrollment.
- Methods
 - The data were analyzed using descriptive statistics and regression models.
 - Survey weights were computed to adjust for sample bias.
 - To enable comparison between the KAPPAS1 and KAPPAS2 datasets, the equipercntile equating method was applied.



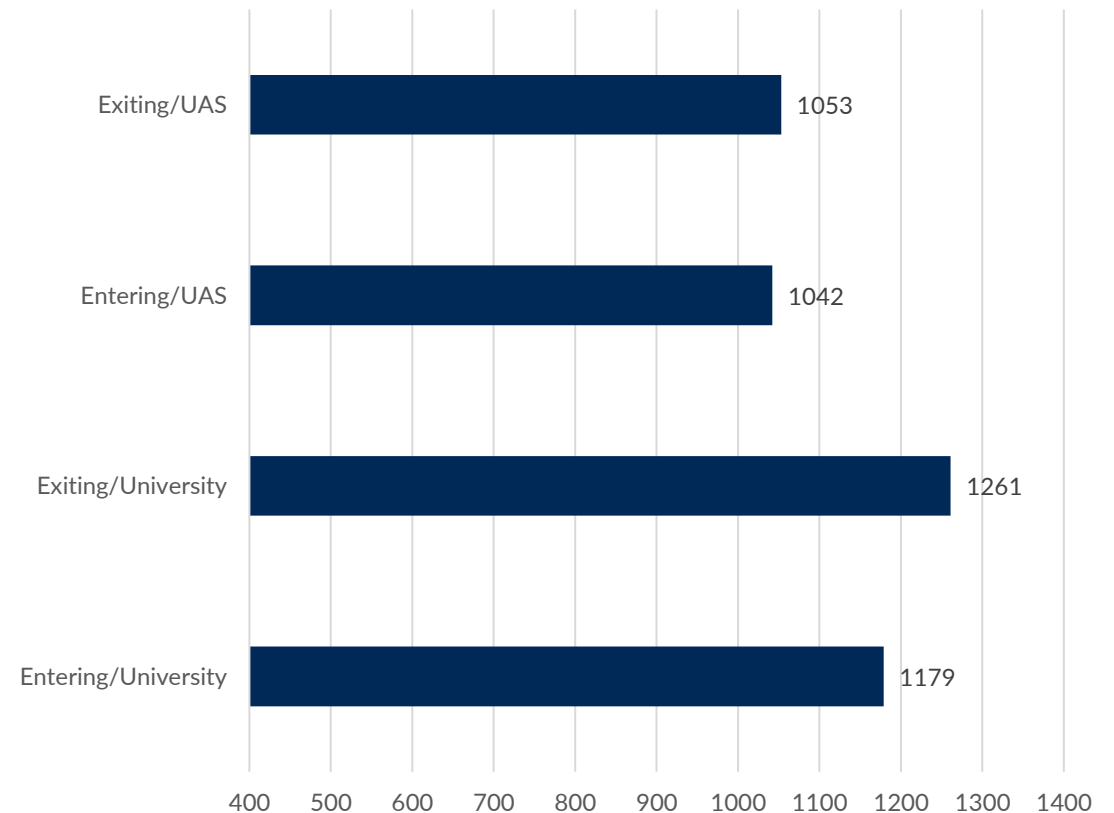
Key findings

Ursin, J., Hyytinen, H., Nissinen, K., Silvennoinen, K., Väänänen, L., & Jämsä, M. (2026). *Korkeakouluopiskelijoiden geneeristen taitojen arviointi : KAPPAS2-hankkeen ensituloksia*. Opetus- ja kulttuuriministeriö. Opetus- ja kulttuuriministeriön julkaisuja, 2026:30. <https://urn.fi/URN:ISBN:978-952-415-283-9>

CLA+ mean scores by type of HEI and study stage



- **University participants scored significantly higher than their UAS counterparts.**
- The difference was **137 points** in favor of entering university students and **208 points** in favor of exiting university students.
- **Among university students, the results of those at the final stage of their undergraduate studies were statistically significantly higher than those of entering students. No similar difference was observed among UAS students.**



Participants' mastery levels by type of HEI and study stage (%)



	Advanced	Accomplished	Proficient	Developing	Emerging
In total	6	18	32	26	18
Entering/UNI	9	26	41	19	6
Exiting/UNI	18	35	40	5	1
Entering/UAS	1	9	27	37	27
Exiting/UAS	1	13	26	31	28

- For 44% of the participants, generic skills were assessed at a developing or lower level, while the remaining participants demonstrated proficiency or higher-level performance.
- 25% of entering university students were at a developing level or below, but by the end of the undergraduate studies, only 6% remained at the lowest levels, and over 50% achieved the top two mastery levels.
- At entry, 64% of UAS students were at a developing level or below, and by the end of their undergraduate studies, 59% remained at these two lowest mastery levels.

Mastery levels in Finnish: emerging = **heikko**, developing = **tyydyttävä**, proficient = **hyvä**, accomplished = **kiitettävä**, advanced = **erinomainen**.



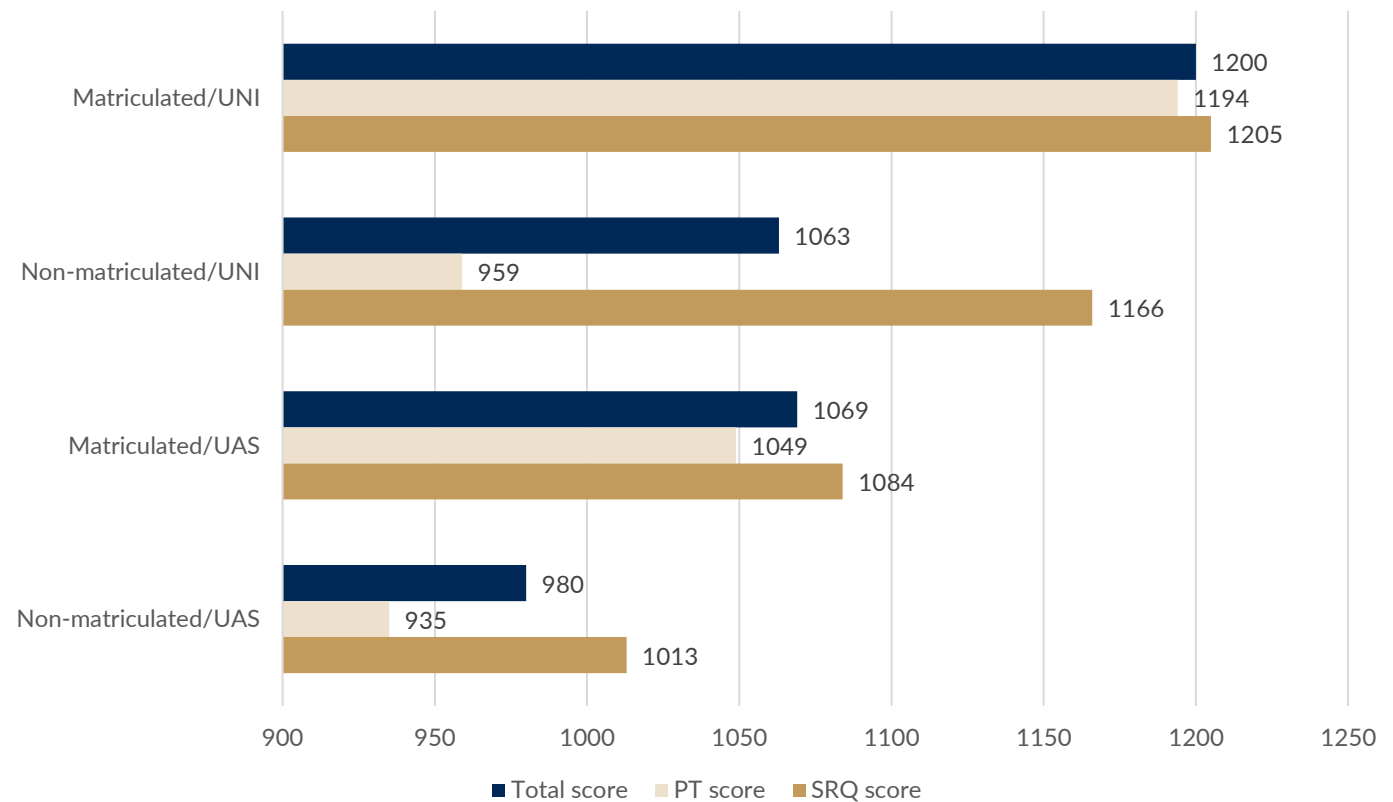
Background variables and generic skills

- The study examined, among other factors, how generic skills relate to field of study, gender, age, **educational and socioeconomic background**, **test attitudes**, mental well-being, sense of belonging, **academic achievement**, and **study progression**.

Matriculation examination and CLA+ mean scores



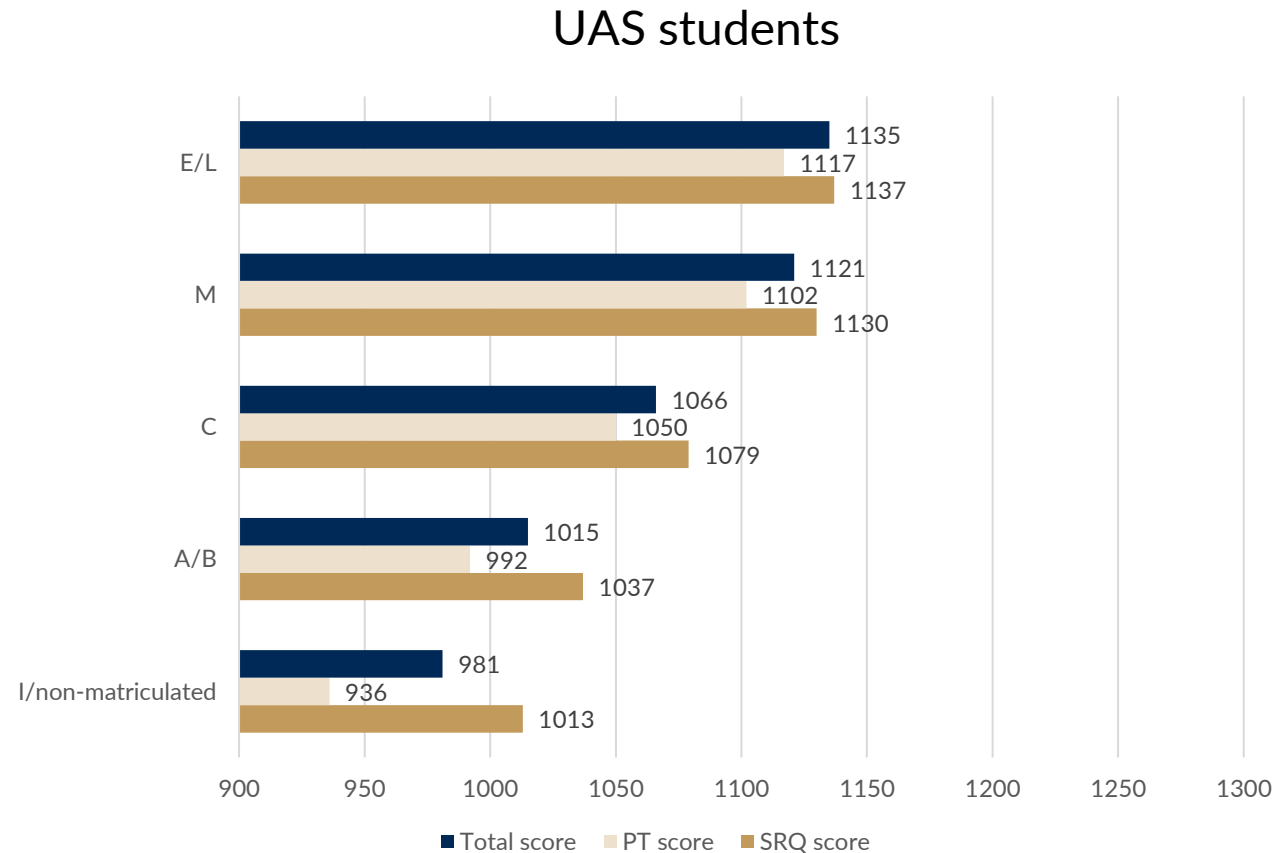
- Completing the **matriculation examination** was **strongly associated** with **generic skills proficiency** in both higher education sectors.
- In both sectors, students who had completed the matriculation examination scored higher than those who had not.
- Matriculation examination explained 5–8% of the variation in total scores.



Native language grade in matriculation examination and CLA+ mean scores



- CLA+ mean scores increase almost linearly with native language grades.
- University participants with the highest native language grade (L) score 108 points higher than those with the lowest grade (I).
- Among UAS participants, this difference is even larger: 154 points.
- The grade in the native language matriculation exam explained **15–18%** of the variation in total scores.

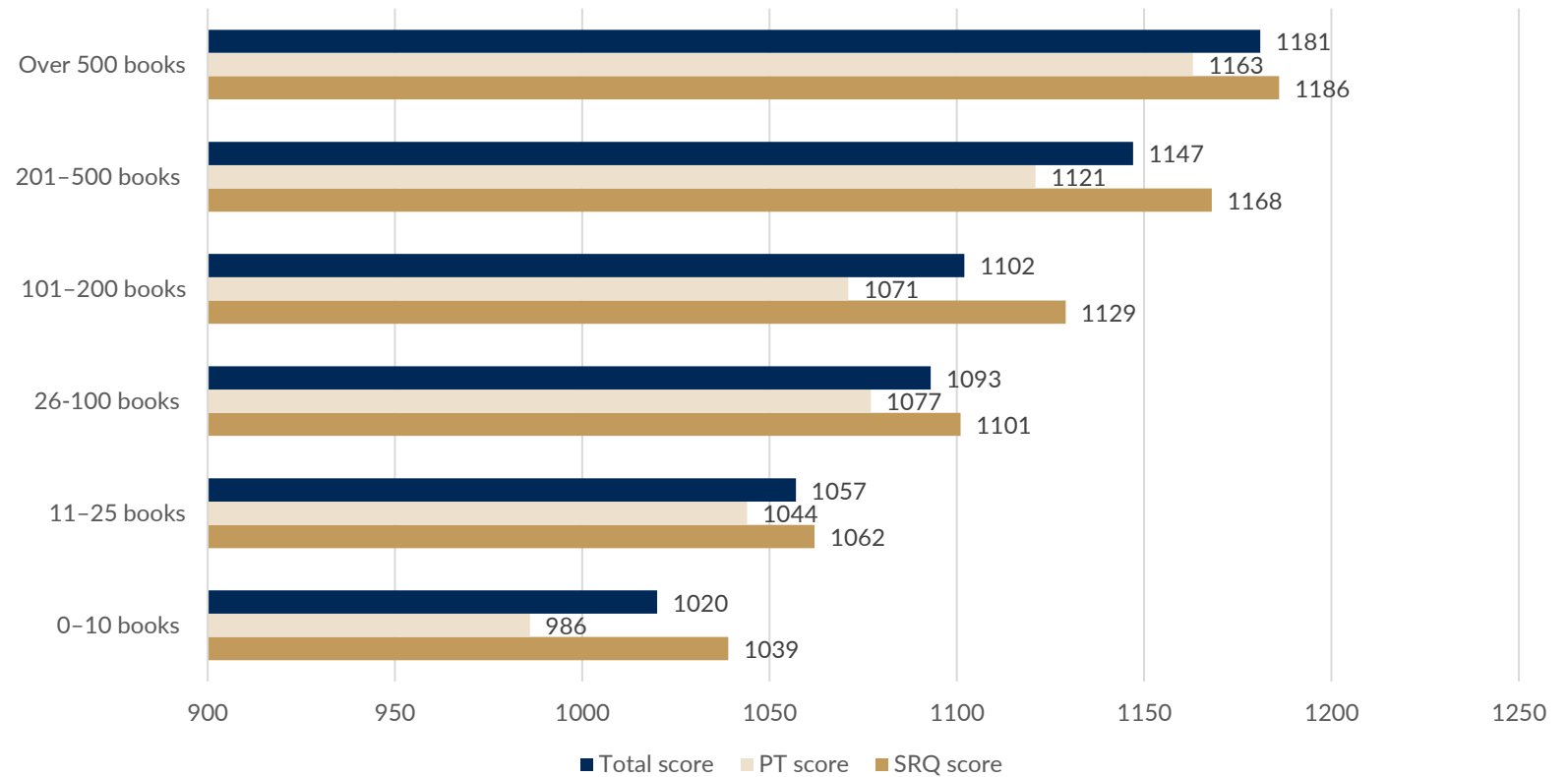


The **grades** in matriculation examination are (from highest to lowest): *laudatur* (L), *eximia cum laude approbatur* (E), *magna cum laude approbatur* (M), *cum laude approbatur* (C), *lubenter approbatur* (B), *approbatur* (A) and *improbatur* (I, failed test).

Number of books at childhood home and CLA+ mean scores



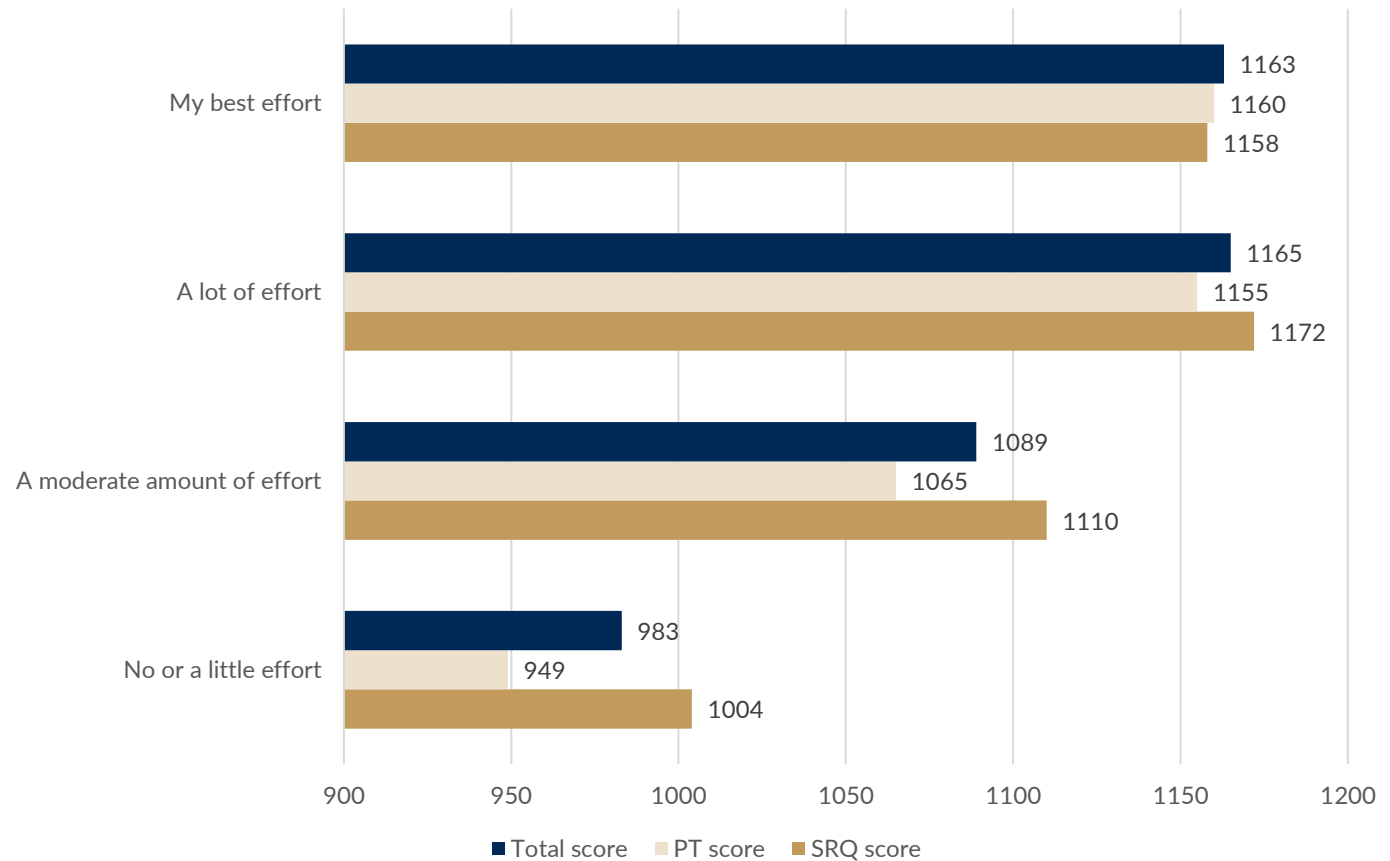
- Number of books at home serves as a proxy for childhood cultural capital.
- CLA+ mean scores increase linearly with number of books at childhood home.
- The difference between the two extremes—those who had the most books at home during childhood and those who had the fewest—was 161 points in total score.
- Number of books at childhood home explained 6% of the variation in total scores.



Effort and CLA+ mean scores



- **Effort** also had a **strong** and statistically significant **association with the results**, although the relationship was not entirely straightforward.
- Effort explained **12%** of the variation in total scores.



Association between generic skills, academic performance, and study progress



- Academic performance (i.e., grades) and study progress (i.e., ECTS credit accumulation) were analyzed using partial correlations.
- **Generic skills were associated with higher grades**, although the relationship was weak ($r = -0.26$ to 0.28). Students who performed best on the CLA+ test tended to have slightly higher grades.
- The **association between study progress and generic skills was even weaker and often negative** ($r = -0.12$ to 0.03). Especially university students with strong generic skills had, on average, completed fewer ECTS credits.

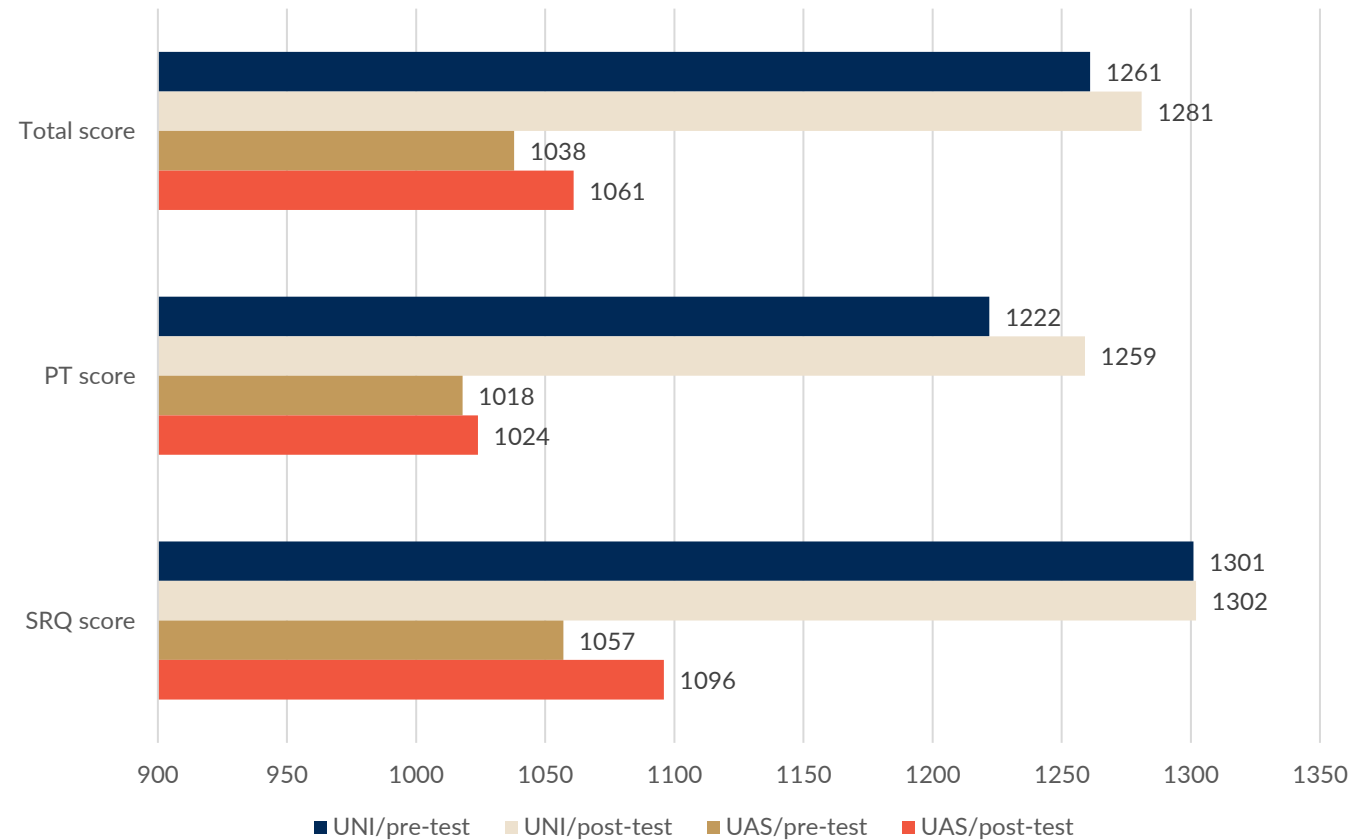
Development of generic skills during HE studies



Mean CLA+ scores of the participants in the longitudinal study by HE sector



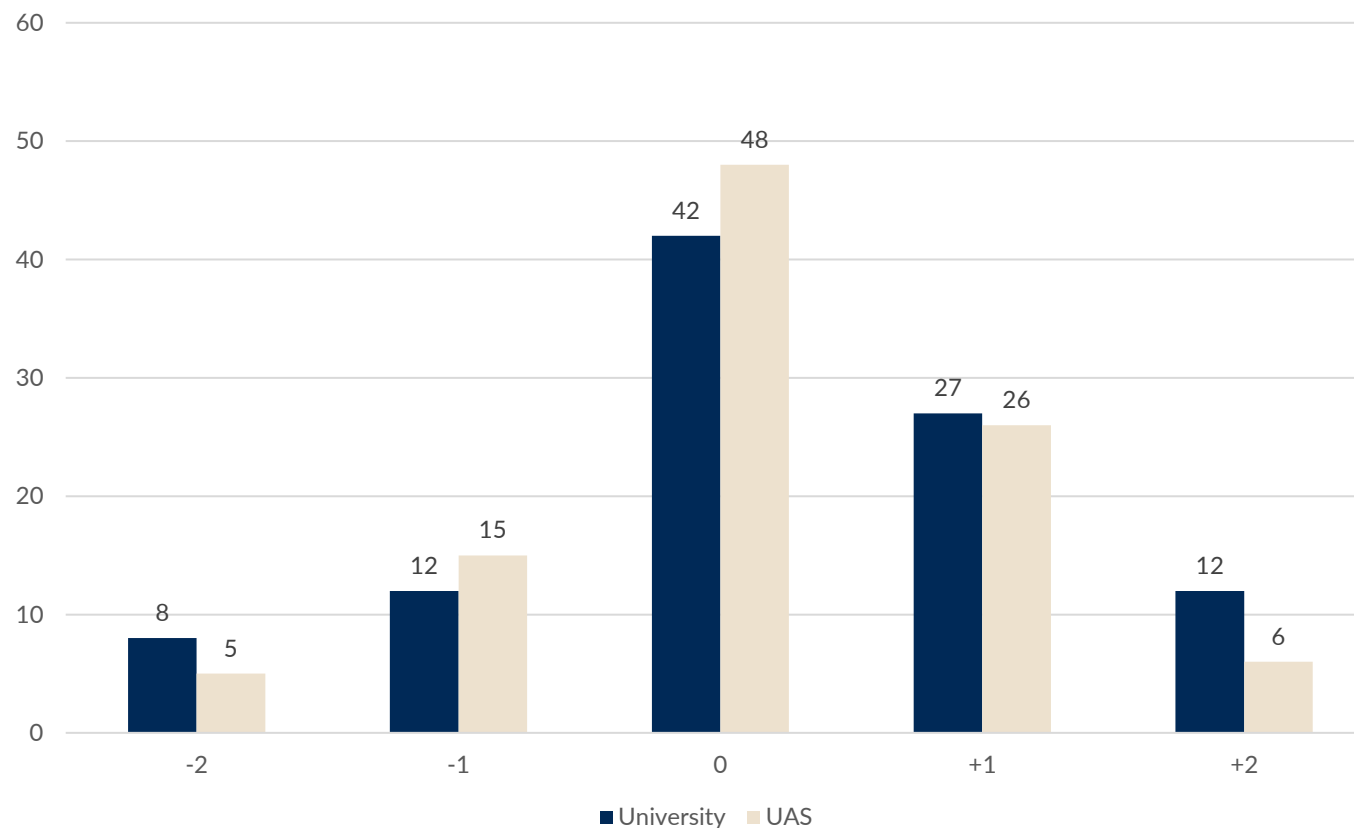
- The post-test results were generally higher than the pre-test results, suggesting development of generic skills during the course of studies.



Changes in mastery levels among the participants in the longitudinal study by HE sector



- Although the longitudinal data indicate an average improvement in students' generic skills over the course of their studies, **the development varies across individuals.**
- Approximately **40% of students improved** their overall CLA+ score by at least 50 points, while **28% experienced a decline** of at least the same magnitude. For the remaining 31%, the change between pre- and post-measurements was less than 50 points.
- Overall, **20% of both university and UAS students showed a decline in performance** from the pre-test. In contrast, **performance improved for 39% of university students and 32% of UAS students.**



To conclude

- Both KAPPAS projects have shown that four out of ten higher education students clearly need to improve their level of generic skills.
- While many demonstrate solid skills, the **overall proficiency gap remains significant** even at the end of undergraduate studies.
- The development of generic skills **occurs during higher education studies, but the progress is modest and varies considerably between individuals.**



Recommendation #1: Generic skills should be strengthened throughout the educational trajectory



- Upper secondary education appears to strengthen generic skills more than vocational education.
- This aligns with research showing differences between general and vocational pathways in learning content, opportunities, outcomes, and careers (Leino et al., 2019; Härkönen & Sirniö, 2020; Kleemola et al., 2023).
- **Ensuring generic skill development across all pathways is essential**, especially in vocational education, to prevent widening skill gaps.
- **Generic skills are crucial** not only for academic success but also **for critical citizenship and navigating everyday life**—allowing citizens to distinguish true from false information and reliable from unreliable sources.
- **Strengthening generic skills at all educational levels promotes equity** and ensures equal opportunities in studies, work, and life.

Recommendation #2: The balance between learning quality and graduation speed should be reconsidered



- The KAPPAS2 results highlight a complex link between study progress and achievement: while generic skills are associated with higher grades, **some students**—particularly at universities—with **strong generic skills progress more slowly than those with weaker skills**.
- One explanation is **that students who engage in deep learning may struggle with self-regulation and time management** (Tuononen et al., 2022). Although **their thorough approach supports strong grades, it can slow progress and reduce credit accumulation**. This aligns with earlier findings showing tensions between deep learning approaches and rapid study progression (Haarala-Muhonen et al., 2017).
- Another explanation reflects a broader tension in higher education: **students are expected to progress efficiently and graduate on time, yet high-quality learning and the development of generic skills require time and persistence**.
- The results call for **rethinking whether higher education should prioritize efficient progression or the deep development of students' competencies**—and how to balance these goals.

Recommendation #3: HEIs should adopt a pedagogically grounded, motivation-supporting approach to teaching generic skills



- The KAPPAS2 results indicate that the development of generic skills in higher education is uneven and varies between individuals (cf. Arum & Roksa, 2011).
- This variation is influenced by background factors, particularly students' engagement and effort during assessments (Oppenheimer et al., 2016; Ursin et al., 2021; Hyytinen et al., 2024). **Differences may therefore reflect test motivation rather than actual skill levels.** At the same time, **motivation is central to skill development**, as generic skills emerge through active use and application (Culver et al., 2019), **making it a key prerequisite rather than merely a measurement issue.**
- **Current higher education practices support some students effectively but do not consistently engage all groups** in developing generic skills (Roksa et al., 2017; Tuononen et al., 2025). **For some students, development remains limited, highlighting the need for targeted support**—especially for those with weaker initial skills, lower motivation or self-regulation, or fewer opportunities due to socioeconomic background (Roksa et al., 2017; Kleemola et al., 2023).
- **Promoting generic skills requires a pedagogically designed, motivation-supporting approach.** This involves systematically developing teaching, learning, and assessment so that skills are practiced in a goal-oriented, repeated, visible, and meaningful way (El Soufi & See, 2019; Hyytinen et al., 2025). It also **requires pedagogical training for teachers**, as experience alone is often insufficient to develop effective teaching practices or pedagogical thinking (Tuononen et al., 2025).

Save the date!



- MoEC will organise a seminar, **Generic Skills Made Visible – Practical Examples from Higher Education Studies and Teaching**, on **9 October from 12:00 to 16:00** in a hybrid format, both online and in Helsinki.
- The seminar will showcase international and national examples of how generic skills can be made visible and effectively integrated into degree programmes, curricula, and teaching practices.





UEF | PEDA

YLIOPISTOPEDAGOGIIKKA - UNIVERSITY PEDAGOGY

ΛΓΙΟΒΙΣΤΟΒΕΔΥΣΟΔΙΙΚΚΥ - ΠΙΛΙΕΡΣΙΤΥ ΠΕΔΥΣΟΔΥ



MINISTRY OF
EDUCATION AND CULTURE
FINLAND

KIITOS!

<https://www.jyu.fi/en/fier/research-at-fier/kappas>

jani.p.ursin@jyu.fi



References



- Arum, R., & Roksa, J. (2011). *Academically adrift. Limited learning on college campuses*. Chicago: The University of Chicago Press.
- Braun, E., Woodley, A., Richardson, J. T. E., & Leidner, B. (2012). Self-rated competences questionnaires from a design perspective. *Educ. Res. Rev.* 7, 1–18. doi: 10.1016/j.edurev.2011.11.005
- El Soufi, N., & See, B. H. (2019). Does explicit teaching of critical thinking improve critical thinking skills of English language learners in higher education? A critical review of causal evidence. *Studies in Educational Evaluation*, 60, 140–162.
- Haarala-Muhonen, A., Ruohoniemi, M., Parpala, A., Komulainen, E., & Lindblom-Ylänne, S. (2017). How do the different study profiles of first-year students predict their study success, study progress and the completion of degrees? *Higher Education*, 74(6), 949–962.
- Hyytinen, H., Kleemola, K., Ursin J., & Toom, A. (2025). Kriittisen ajattelun tukeminen korkeakouluopetuksessa. Teoksessa A. Parpala, & L. Postareff (toim.), *Hyvinvoiva ja pedagogisesti osaava korkeakouluopettaja*. Vastapaino.
- Härkönen, J., & Sirniö, O. (2020). Educational transitions and educational inequality: A multiple pathways sequential logit model analysis of Finnish birth cohorts 1960–1985. *European Sociological Review*, 36(5), 700–719.
- Kleemola, K., Hyytinen, H. & Toom, A. (2023). Critical thinking and writing in transition to higher education in Finland: do prior academic performance and socioeconomic background matter? *European Journal of Higher Education*, 13:4, 488-508.
- Leino, K., Ahonen, A. K., Hienonen, N., Hiltunen, J., Lintuvuori, M., Lähteinen, S., Lämsä, J., Nissinen, K., Nissinen, V., Puhakka, E., Pulkkinen, J., Rautopuro, J., Sirén, M., Vainikainen, M-P., & Vettenranta, J. (2019). *PISA 18 ensituloksia*. Opetus- ja kulttuuriministeriön julkaisuja, 2019:40. Opetus- ja kulttuuriministeriö.
- Oppenheimer, D., Zaromb, F., Pomerantz, J. R., Williams, J. C., & Park, Y. S. (2017). Improvement of writing skills during college: A multi-year cross-sectional and longitudinal study of undergraduate writing performance. *Assessing Writing*, 32, 12–27.
- Roksa, J., Trolan, T. L., Pascarella, E. T., Kilgo, C. A., Blaich, C., & Wise, K. S. (2017). Racial inequality in critical thinking skills: The role of academic and diversity experiences. *Research in Higher Education*, 58(2), 119–140.
- Tuononen, T., Hyytinen, H., Räisänen, M., Hailikari, T., & Parpala, A. (2022). Metacognitive awareness in relation to university students' learning profiles. *Metacognition and Learning*, 18, 37–54.
- Tuononen, T., Hyytinen, H., Kleemola, K., Hailikari, T., & Toom, A. (2025). Generic skills in higher education – teachers' conceptions, pedagogical practices and pedagogical training. *Teaching in Higher Education*, 30(1), 207–224.
- Ursin, J., Hyytinen, H., & Silvennoinen, K. (toim.) (2021). *Korkeakouluopiskelijoiden geneeristen taitojen arviointi – Kappas!-hankkeen tuloksia*. Opetus- ja kulttuuriministeriön julkaisuja 2021:6.
- Van Damme, D. and D. Zahner (eds.) (2022), *Does Higher Education Teach Students to Think Critically?*, OECD Publishing, Paris, <https://doi.org/10.1787/cc9fa6aa-en>.

Publications from the KAPPAS Projects



Scientific articles

- Hyytinen, H., Jämsä, M., Tuononen, T., & Kleemola, K. (2025). A systematic-narrative review of performance-based assessments of critical thinking in higher education. *Assessment & Evaluation in Higher Education*. <https://doi.org/10.1080/02602938.2025.2553341>
- Hyytinen, H., Nissinen, K., Kleemola, K., Ursin, J., & Toom, A. (2023). How do self-regulation and effort in test-taking contribute to undergraduate students' critical thinking performance? *Studies in Higher Education*. <https://doi.org/10.1080/03075079.2023.2227207>
- Hyytinen, H., Ursin, J., Silvennoinen, K., Kleemola, K., & Toom, A. (2021). The dynamic relationship between response processes and self-regulation in critical thinking assessments. *Studies in Educational Evaluation*, 71. <https://doi.org/10.1016/j.stueduc.2021.101090>
- Kleemola, K., Hyytinen, H., & Toom, A. (2022a). Critical thinking and writing in transition to higher education in Finland: do prior academic performance and socioeconomic background matter? *European Journal of Higher Education*. <https://doi.org/10.1080/21568235.2022.2075417>
- Kleemola, K., Hyytinen, H., & Toom, A. (2022b). Exploring internal structure of a performance-based critical thinking assessment for new students in higher education. *Assessment & Evaluation in Higher Education*, 47(4), 556–569. <https://doi.org/10.1080/02602938.2021.1946482>
- Kleemola, K., Hyytinen, H., & Toom, A. (2022c). The challenge of position-taking in novice higher education students' argumentative writing. *Frontiers in Education*, 7. <https://doi.org/10.3389/feduc.2022.885987>
- Silvennoinen, K., Marttunen, M., Hyytinen, H., & Ursin, J. (2026). A Qualitative Study on Variation in the Written Argumentation of Finnish Final-Stage Undergraduate Students. *Higher Education Quarterly*, 80(2), Article e70118. <https://doi.org/10.1111/hequ.70118>
- Ursin, J., Hyytinen, H., Silvennoinen, K., & Toom, A. (2022). Linguistic, contextual, and experiential equivalence issues in the adaptation of a performance-based assessment of generic skills in higher education. *Frontiers in Education*, 7. <https://doi.org/10.3389/feduc.2022.885825>
- Zahner, D., Hyytinen, H., Nissinen, K., Silvennoinen, K., & Ursin, J. (2025). Investigating learning gains of critical thinking and communication skills among Finnish and American higher education students. *Journal of Applied Research in Higher Education*, Early online. <https://doi.org/10.1108/jarhe-05-2025-0420>

Book sections

- Hyytinen, H., Kleemola, K., Ursin, J., & Toom, A. (2025). Kriittisen ajattelun tukeminen korkeakouluopetuksessa [Supporting critical thinking in higher education teaching]. In A. Parpala, & L. Postareff (Eds.), *Hyvinvoiva ja pedagogisesti osaava korkeakouluopettaja* [A well-being and pedagogically competent higher education teacher] (pp. 105-115). Vastapaino. <https://doi.org/10.58181/VP9789523972704>
- Ursin, J., & Hyytinen, H. (2022). Assessing the generic skills of undergraduate students in Finland. In D. Van Damme, & D. Zahner (Eds.), *Does Higher Education Teach Students to Think Critically?* (pp. 179–196). Paris: OECD Publishing. <https://doi.org/10.1787/cc9fa6aa-en>
- Zahner, D., Kleemola, K., Hyytinen, H., Ursin, J., & Cortellini, O. (2022). Ensuring cross-cultural reliability and validity. In D. Van Damme, & D. Zahner (Eds.), *Does Higher Education Teach Students to Think Critically?* (pp. 71–85). Paris: OECD Publishing. <https://doi.org/10.1787/cc9fa6aa-en>

Dissertations

- Kleemola, K. (2023). *Variation in novice students' critical thinking and argumentation: Transition to higher education is not a level playing field*. Helsingin yliopisto. <http://urn.fi/URN:ISBN:978-951-51-8941-7>

Final reports

- Ursin, J., Hyytinen, H. & Silvennoinen, K., eds. (2021). *Korkeakouluopiskelijoiden geneeristen taitojen arviointi: Kappas!-hankkeen tuloksia*. Opetus- ja kulttuuriministeriö. Opetus- ja kulttuuriministeriön julkaisuja, 2021:6. <http://urn.fi/URN:ISBN:978-952-263-892-2>
- Ursin, J., Hyytinen, H., Nissinen, K., Silvennoinen, K., Väänänen, L., & Jämsä, M. (2026). *Korkeakouluopiskelijoiden geneeristen taitojen arviointi : KAPPAS2-hankkeen ensituloksia*. Opetus- ja kulttuuriministeriö. Opetus- ja kulttuuriministeriön julkaisuja, 2026:30. <https://urn.fi/URN:ISBN:978-952-415-283-9>