Description

Physics Learning Assessment Clusters of Expertise focuses on educational dharma on strengthening the subject of Assessment of Learning Processes and Outcomes, Physics Education Research Methods, Statistics for Physics Education Research, and supporting courses in the field of expertise such as Measurement and Assessment Instruments for Physics Education; Studies on the UN, TIMSS, and PISA; Physics Literacy; Item Response Theory; and Computer-Based Assessment. This specialization aims to produce graduates who are competent in developing knowledge and skills related to research in the field of assessment and evaluation of Physics learning; able to work independently, professionally, and responsibly in research activities to implement and develop assessments of physics learning. Furthermore, related to the dharma of research and community service, the physics learning assessment cluster strengthens its research and service on expertise: the development of 21st-century skills assessment, three-tier diagnostic test instrument development, four-tier diagnostic test instrument development, misconceptions profile, critical-thinking skills profile, problem-solving skills profile, HOTS profile, assessment of student creativity in studying the ESD-based physics curriculum, identification of conceptions and multi-representation skills, development and identification of scientific literacy ability profiles, web-based assessment.

Personalia

The Team of Physics Learning Assessment Clusters of Expertise

	Prof. Dr. Wasis, M.Si. (Coordinator Clusters of Expertise)	**Skills:** Development of Educational Assessment Instruments and Scoring
	Abu Zainuddin, S.Pd., M.Pd. (Coordinator of the pedagogical research sub-laboratory)	**Skills:** Misconception Diagnostics and Assessment of Learning Outcomes
	Dr. Titin Sunarti, M.Si. (Member)	**Skills:** Scientific Literacy and Assessment of Learning Outcomes
	Woro Setyarsih, S.Pd.,M.Si. (Member)	**Skills:** Misconception Diagnostics and Higher-Order Thinking Skills

	Mukhayyarotin Niswati Rodliyatul Jauhariyah, S.Pd., M.Pd. (Member)	**Skills:** Classroom Assessment

Research Projects

1. Development of the Politomus Scoring System on Multiple Choice Questions to Improve Educational Assessment Accuracy (Competing Grants 2007-2008)
2. Partial Credit Model Scoring on Multiple True-False Items in Physics (Ministry of Education and Culture Research and Development 2009)
3. Analysis of Indonesian Students' Scientific Ability Based on 2007 TIMSS Study (Ministry of Education and Culture Research and Development 2009)
4. Analysis of Indonesian Students' Science Ability Based on 2007 TIMSS Study (Ministry of Education and Culture Research and Development 2009)
5. Trends in Science Literacy of Indonesian Students in the 2000-2009 PISA Study (Ministry of Education and Culture Research and Development 2011)
6. Development Model for Teacher Performance Assessment (IPA) Through Video (Ministry of Education and Culture Research and Development 2011)
7. Characterization of Higher Order Thinking Skills and Scientific Literacy Assessment Instruments (Comparative Study of TIMSS, PISA, and UN Questions (Fundamental Research 2013-2014)
8. Analysis of the Surabaya City Physics Teacher Competency Test (Directorate General of Teachers and Education Employee 2015)
9. Development of KKNI-Based School Curriculum Study Textbooks for Students of the Surabaya State University Physics Education Study Program (2017, UNESA PNBP)
10. Competency Test Model for Unesa FMIPA Graduates Using CBT with Three-Tier Questions (2018)
11. Equipping Ecopreneurship Skills in Students by Applying Learning that Integrates Environmental Literacy in Basic Physics Courses (2018, PNBP UNESA)
12. Identification of Misconceptions on the Material of the Kinetic Theory of Gas in New Students of the Physics Education Study Program in 2019/2020 (2019 FMIPA Policy)
13. Assessment of Student Creativity for Teacher Candidates in Compiling a Curriculum Study Based on Education for Sustainable Development (2019 FMIPA Policy)
14. Identification of Student Conceptions and Multirepresentation Skills (2019 Postgraduate Grants)
15. Workshop on Preparation of Higher Order Thinking Skills (HOTS) Questions at the Physics MGMP of Mojokerto High School (PKM Policy FMIPA 2019)
16. Identifying the Misconceptions of New Students for the Physics Education Study Program in 2019/2020 (2019, UNESA PNBP)
17. Profile of the Department of Physics at Unesa as the Tridarma Image of Higher Education for Preparation for the 2020 Accreditation Visitation (2019, UNESA PNBP)
18. Assessment of Student Creativity for Teacher Candidates in Compiling Curriculum Studies Based on Education for Sustainable Development (2019, PNBP UNESA)
19. HOTS-Based Learning and Assessment (Postgraduate PKM in Magetan)
20. Android E-Book Development for Physics Education Undergraduate Students During the Study From Home Period During the Covid-19 Pandemic on Bloom's Taxonomy Topic (2020, UNESA PNBP)
21. Development of Higher-Order Thinking Skills (HOTS) Assessment Instruments (2021, UNESA PNBP)

RESEARCH PUBLICATION

Publication	Authors	Name of Journal/Proceeding	Link	Quartil
Evaluation of self-regulated learning on problem-solving skills in online basic physics learning during the covid-19 pandemic	Abtokhi A., Jatmiko B., **Wasis W.**	Journal of Technology and Science Education Vol 11, No 2 (2021)	Click here	Q3
Analysis of physics questions based on HOTS criteria: The result of physics teacher training	**Jauhariyah M.N.R., Sunarti T., Wasis,** Supardiyono, **Setyarsih W., Zainuddin A.**	Journal of Physics: Conference Series Vol 1805 (1) 012023	Click here	Q4 (SJR: 0,21)
Literature Review on the Use of Educational Physics Games in Improving Learning Outcomes	Suliyanah, Deta U.A., Kurniawan F.K., Lestari N.A., Yantidewi M., **Jauhariyah M.N.R.,** Prahani B.K.	Journal of Physics: Conference Series Vol 1805 (1) 012038	Click here	Q4 (SJR: 0,21)
A Preliminary Study of Environmental Learning to Improve Students' Higher Order Thinking Skills in Physics	**Lestari N.A.,** Ambarsari R., **Prahani B.K., Jauhariyah M.N.R., Yantidewi M., Deta U.A.**	Journal of Physics: Conference Series Vol 1805 (1) 012033	Click here	Q4 (SJR: 0,21)
Train the skills of making HOTS-based physics questions to physics teachers in Mojokerto	**Sunarti T., Wasis, Supardiyono, Jauhariyah M.N.R.**	Journal of Physics: Conference Series Vol 1805 (1) 012027	Click here	Q4 (SJR: 0,21)
Using Quizizz to Develop an Assessment of Physics Learning: An Alternative Way for Physics Learning Assessment in the Covid-19 Pandemic Era	Hikmah N., Putri N.A., Nisa' K., **Jauhariyah M.N.R.**	Journal of Physics: Conference Series Vol 1805 (1) 012021	Click here	Q4 (SJR: 0,21)
High Order Thinking Skills Students through Multi-Representation Test on Newtons Law Study	Puspitaningrum H.Z., **Wasis,** Prastowo T.	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
Analysis of Students' Scientific Literacy Skills and the Relationship with Critical Thinking Skills on	Lestari D., **Setyarsih W.**	Journal of Physics: Conference Series 012040	Click here	Q4 (SJR: 0,21)

Global Warming Materials				
ESD for physics: How to infuse education for sustainable development (ESD) to the physics curricula?	**Jauhariyah M.N.R.,** Prahani B.K., Syahidi K., Deta U.A., Lestari N.A., Hariyono E.	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
Profile of Students' Physics Problem-Solving Skills and the Implementation of Inquiry (Free, Guided, and Structured) Learning in Senior High School	Prahani B.K., Susiawati E., Deta U.A., Lestari N.A., Yantidewi M., **Jauhariyah M.N.R.,** Mahdiannur M.A., Candrawati E., Misbah, Mahtari S., Suyidno, Siswanto J.	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
A profile of senior high school students' science process skills on heat material	Prahani B.K., Deta U.A., Lestari N.A., Yantidewi M., **Jauhariyah M.N.R,** Kelelufna V.P., Siswanto J., Misbah M., Mahtari S., Suyidno S.	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
A profile of physics multiple representation ability of senior high school students on heat material	Prahani B.K., Deta U.A., Lestari N.A., Yantidewi M., **Jauhariyah M.N.,** Kelelufna V.P., Siswanto J., Misbah M., Mahtari S., Suyidno S.	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
Prezi Mind Mapping Media in Physics Learning: A Bibliometric Analysis	I Zakhiyah, N Suprapto and **W Setyarsih**	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
Bibliometric Analysis on Online Physics Learning during COVID-19 Pandemic: Contribution to Physics Education Undergraduate Program	B Jatmiko, B K Prahani, N Suprapto, S Admoko, U A Deta, N A Lestari, **M N R Jauhariyah,** M Yantidewi and D Muliyati	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
Critical Thinking Skills on Physics Learning during COVID-19 Pandemic: A Bibliometric Analysis using VOSViewer	B Jatmiko, **T Sunarti,** B K Prahani, E Hariyono, Dwikoranto, F C Wibowo, S Mahtari, Misbah and M Asy'ari	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
A Bibliometric Analysis of Minimum	Suliyanah, B D Adelia, **M N R Jauhariyah,** Misbah,	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)

Competency Assessment Research with VOSViewer Related to the Impact in Physics Education on 2019-2020	S Mahtari, A Saregar and U A Deta			
Improving the Ability to Develop Scientific Articles among Physics Teachers	**T Sunarti, Wasis,** N Suprapto and S Admoko	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
E-LS on The Subject of Temperature: The First Work of a Science-Physics Teacher at Siti Aminah Junior High School Surabaya	A Kholiq, I Sucahyo, **T Sunarti,** D H Kusumawati and **M N R Jauhariyah**	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)
The Performance of Turmeric Paper as an Indicator of The Borax Content in Crackers	F U Ermawati, B K Prahani, Dzulkiflih, M Yantidewi and **A Zainuddin**	Journal of Physics: Conference Series	Click here	Q4 (SJR: 0,21)