**Description**

The philosophy and physics education curriculum cluster focus on educational dharma on strengthening educational philosophy courses, studying school curricula, school physics, and supporting courses in areas of expertise. Furthermore, related to the dharma of research and community service, the philosophy group and physics education curriculum strengthen their research and service on the philosophy of science; nature of science; history of science; curriculum development, K13, place based education–eco pedagogy; scientific argumentation; physics-local wisdom; physics and religion; technological pedagogical content knowledge (TPACK); and science communication.

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**The Team of Philosophy and Physics Education Curriculum Clusters of Expertise**

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|  | Nadi Suprapto, M.Pd., Ph.D. (Coordinator Clusters of Expertise) | **Skills:** *science communication; place-based education – eco pedagogy; scientific argumentation; physics-local wisdom; physics and religion; technological pedagogical content knowledge (TPACK); philosophy of science; curriculum development* |
|  | Utama Alan Deta, S.Pd., M.Pd., M.Si. (Coordinator of the pedagogical research sub-laboratory) | **Skills:** *philosophy of science; nature of science; history of science; physics-local wisdom; science communication; scientific argumentation; physics for school; concept- misconception in physics* |
|  | Dra. Suliyanah, M.Si. (Member) | **Skills:** *K13; place based education – eco pedagogy; physics- local wisdom; physics and religion; scientific argumentation; philosophy of science* |
|  | Setyo Admoko, S.Pd., M.Pd. (Member) | **Skills:** *K13; scientific argumentation; physics and religion; eco pedagogy; philosophy of science; history of science; physics for school; physics ecopreneurship; curriculum development* |

**Research Projects**

1. Development of Pedagogical Content Knowledge-Based Problem Solving Skills Assessment Instruments for Basic Physics Materials for Prospective Physics Teachers (2017)
2. Analysis of the input and output of Physics Department Students as an Effort to Mapping the Characteristics of Students on the Surabaya State University Ecopreneurship Campus (2017, UNESA PNBP)
3. Mapping of Final Project Profiles for Physics Education Study Program Students as an Effort for Equitable and Optimizing Final Projects in All Fields of Research Studies (2018, UNESA PNBP)Pengembangan Buku Ajar *School Curriculum Analysis* untuk Mahasiswa Kelas Unggulan Program Studi Pendidikan Fisika Universitas Negeri Surabaya (2018, PNBP UNESA)
4. Tracer Study of Physics Education Study Program (2018, PNBP UNESA)
5. Tracer Study of Physics Study Program (2018, PNBP UNESA)
6. Application of Toulmin's Argument Pattern (TAP) in Learning School Physics Courses to Improve Students' Thinking Skills (2019, UNESA PNBP)

7. Mapping of Prospective Physics Teacher Argumentation Skills through School Curriculum Study Courses and Science Philosophy Based on Toulmin's Argument Pattern (2019)
8. Mapping and Evaluation of High School Physics Laboratory in East Java in an effort to Achieving Basic Competence (KD) Curriculum Skills 2013 through "Photovoice"(2019-2020)
9. Exploration of Physics Concepts Based on Local Wisdom through “Place-Based Education”: Optimizing Technoparks and Tourist Attractions in East Java (2019-2020)
10. The Effect of Technological, Pedagogical, and Content Knowledge Mastery of Prospective Mathematics and Natural Sciences Teachers on Self-Efficacy for Teaching During the Covid-19 Pandemic (2020, UNESA PNBP)
11. Identification of “INFODEMIC” in the Covid-19 Pandemic Era with the Toulmin Argument Pattern Approach for Physics Department Students (2020, UNESA PNBP)
12. Implementation of the GBR Program: "Glocalization of Bull Racing" as an Effort to Preserve Kerapan Sapi in Tengket Arosbaya Village as Madura Local Wisdom.(2021)
13. Identification of Physical Phenomena in Daily Life Based on Toulmin's Argument Pattern for Physics Department Students during the Covid-19 Pandemic Period. (2021, UNESA PNBP)

## RESEARCH PUBLICATION

| Title | Authors | Name of Journal/Proceeding | Link | Quartil |
|---|---|---|---|---|
| Indonesian curriculum reform in policy and local wisdom: Perspectives from science education | **Suprapto N.,** Prahani B.K., Cheng T.H. | Jurnal Pendidikan IPA Indonesia | Click here | Q2 |
| Top 100 Cited Publications in Physics Education in The Last Thirty Years: A Bibliometric Analysis | **Suprapto N.,** Prahani B.K., **Deta U.A.** | Library Philosophy and Practice | Click here | Q2 |
| The Comparison of Scimago Institutions Rankings (SIR), Scopus, and SINTA Profile: A Case of The Top Indonesian Institutions | **Suprapto N.,** Kusnanik N.W., Iriani S.S., Wibawa S.C., Sujarwanto, Yulianto B., Suprapto, Hariyanto A., Nurhasan | Library Philosophy and Practice | Click here | Q2 |
| Research Trend on Ethnoscience through Bibliometric Analysis (2011-2020) and The Contribution of Indonesia | **Suprapto N.,** Prahani B.K., **Deta U.A.** | Library Philosophy and Practice | Click here | Q2 |
| “Unless You Can Explain”: Voices of Graduate Students and Their Professor Regarding the Importance of Science Communication Course | **Suprapto N.,** Ku C.-H., Chang T.-S. | Journal of Turkish Science Education | Click here | Q2 |
| The use of physics pocketbook based on augmented reality on planetary motion to | **Suprapto N.,** Ibisono H.S., Mubarok H. | Journal of Technology and Science Education | Click here | Q3 |

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| improve students' learning achievement | | | | |
| Online Scientific Creativity Learning (OSCL) in Science Education to Improve Students' Scientific Creativity in Covid-19 Pandemic | Binar Kurnia Prahani, **Nadi Suprapto**, Fida Rachmadiarti, Arif Sholahuddin, Saiyidah Mahtari, Suyidno, Joko Siswanto | Journal of Turkish Science Education | Click here | Q2 |
| Kinematics of "traffic Light": A Socio Scientific Issue Performed by Undergraduate Physics Students | **Suprapto N., Admoko S.** | Journal of Physics: Conference Series | Click here | Q4 |
| 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 | Click here | Q4 |
| Using Toulmin's Argument Pattern Approach to Identify Infodemics in the Covid-19 Pandemic Era | **Admoko S., Suprapto N., Suliyanah, Deta U.A.,** Achmadi H.R., **Hariyono E., Madlazim** | Journal of Physics: Conference Series | Click here | Q4 |
| 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 | Click here | Q4 |
| PicsAR: A Physics Visualisation to Enhance Students' Thinking Skills in Abstract Concepts | **Suprapto N.,** Nandyansah W. | Journal of Physics: Conference Series | Click here | Q4 |
| Understanding and Awareness of Undergraduate Physics Student in Earthquake Phenomena in Indonesia: A Response of a Series Earthquakes on July 5-7, 2020 in Java | **Deta U.A.,** Nugraha C.P., Lestari N.A., Ambasari R., Ain T.N., Yantidewi M., Jauhariyah M.N.R., Prahani B.K. | Journal of Physics: Conference Series | Click here | Q4 |
| Enhancing Students' Science Communication Skill: Validation of Learning Tools Based MORE Learning Model | Pratiwi T.P., Munasir, **Suprapto N.** | Journal of Physics: Conference Series | Click here | Q4 |
| The correlation between physics problem-solving skill and metacognitive ability from collaboration of socratic dialogue-modeling instruction implementation | Lestari N.A., **Deta U.A.** | IOP Conference Series: Earth and Environmental Science | Click here | - |

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| The scientific argumentation profile of annular solar eclipse phenomenon June 21st2020 of physics undergraduate student in Universitas Negeri Surabaya | **Deta U.A.,** Yanti V.K., Misbah, Mahtahari S., Alamsyah | IOP Conference Series: Earth and Environmental Science | Click here | - |
| Linear and non-linear refractive indices in curved space | Hadi M., **Deta U.A.**, Husein A.S. | IOP Conference Series: Earth and Environmental Science | Click here | - |
| The validity of introduction to nuclear physics e-module as a teaching material during covid-19 pandemic | Misbah M., Sasmita F.D., Dinata P.A.C., **Deta U.A.,** Muhammad N. | IOP Conference Series: Earth and Environmental Science | Click here | - |
| ESD for physics: How to infuse education for sustainable development (ESD) to the physics curricula? | Jauhariyah M.N.R., **P**rahani B.K.**,** Syahidi K., **Deta U.A.,** Lestari N.A., Hariyono E. | Journal of Physics: Conference Series | Click here | Q4 |
| The Understanding and Awareness of First-Year Undergraduate Physics Students in Astronomical Phenomena: A Response of Penumbral Lunar Eclipses on June 5th, 2020 | **Deta U.A.,** Fadila D., Lestari N.A., Yantidewi M., Nurlailiyah A., Prahani B.K. | Journal of Physics: Conference Series | Click here | Q4 |
| 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 |
| The implementation of Argument Driven Inquiry (ADI) learning model to improve scientific argumentation skills of high school students | **Admoko S.,** Hanifah N., **Suprapto N.,** Hariyono E., Madlazim M**.** | Journal of Physics: Conference Series | Click here | Q4 |
| 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., Kelelufna V.P., Siswanto J., Misbah M., Mahtari S., Suyidno S. | Journal of Physics: Conference Series | Click here | Q4 |
| A profile of physics multiple representation ability of senior high school | Prahani B.K., **Deta U.A.,** Lestari N.A., Yantidewi M., Jauhariyah M.N., | Journal of Physics: Conference Series | Click here | Q4 |

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| students on heat material | Kelelufna V.P., Siswanto J., Misbah M., Mahtari S., Suyidno S. | | | |
| Getting to Know the Last Five Years Trend on Microcontroller Research: A Bibliometric Analysis | M Yantidewi, B Jatmiko, I Sucahyo, A Kholiq, N A Lestari and **U A Deta** | Journal of Physics: Conference Series | Click here | Q4 |
| 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 |
| Research on Physics of Photography: A Bibliometric Study (2000-2020) | **N Suprapto**, A Kholiq, B K Prahani and **U A Deta** | Journal of Physics: Conference Series | Click here | Q4 |
| 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 |
| A Bibliometric Analysis of Minimum Competency Assessment Research with VOSViewer Related to the Impact in Physics Education on 2019-2020 | **Suliyanah**, B D Adelia, M N R Jauhariyah, Misbah, S Mahtari, A Saregar and **U A Deta** | Journal of Physics: Conference Series | Click here | Q4 |
| 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 |
| Research Trends on Ethnoscience based Learning through Bibliometric Analysis: Contributed to Physics Learning | H N Hidaayatullaah, **N Suprapto,** E Hariyono, B K Prahani and D Wulandari | Journal of Physics: Conference Series | Click here | Q4 |
| Profile of Students' Creative Thinking Skills on Global Warming Material: Gender Perspective in Physics Learning | D Wulandari, **E Hariyono, N Suprapto,** H N Hidaayatullaah and **B K Prahani** | Journal of Physics: Conference Series | Click here | Q4 |