PERANAN PRAKTIKUM BIOLOGI BERBASIS PROYEK PENELITIAN KREATIF DALAM MENINGKATKAN KREATIVITAS ILMIAH SISWA SMA

DISERTASI

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Peranan Praktikum Biologi Berbasis Proyek Penelitian Kreatif Dalam Meningkatkan Kreativitas Ilmiah Siswa SMA

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ABSTRAK

Penelitian ini bertujuan untuk mengungkap peran model Praktikum Berbasis Proyek Penelitian Kreatif (PBP2K) terhadap perubahan disposisi kreatif, meningkatkan keterampilan berpikir kreatif dan meningkatkan kemampuan menghasilkan produk kreatif pada mata pelajaran biologi di SMA. Model PBP2K dirancang dalam tujuh langkah pembelajaran, merupakan kegiatan praktikum dalam setting penelitian kreatif siswa dan dilaksanakan dalam bentuk kegiatan proyek kelompok. Penelitian ini dilakukan dengan menggunakan *mixed method research embedded experimental design*. Subjek penelitian 59 siswa (kelas eksperimen) dan 34 siswa (kelas kontrol) diambil dengan menggunakan teknik *cluster random sampling* dari populasi siswa kelas X Jurusan IPA di salah satu SMA Negeri di Kota Mataram Lombok, Nusa Tenggara Barat tahun pelajaran 2018/2019. Kelas eksperimen memperoleh pembelajaran model Praktikum Berbasis Proyek Penelitian Kreatif (PBP2K) dan kelas kontrol model praktikum verifikatif. Instrumen yang digunakan dalam penelitian terdiri atas kuisioner disposisi dan posisi disposisi kreatif biologi, tes keterampilan berpikir kreatif, rubrik penilaian produk kreatif, angket persepsi siswa pada pembelajaran biologi, lembar observasi, dan angket untuk mengetahui tanggapan siswa terhadap implementasi model praktikum PBP2K. Hasil penelitian menunjukkan secara umum terdapat perbedaan peningkatan disposisi kreatif biologi yang signifikan antara kelas eksperimen dan kelas kontrol. Peningkatan disposisi kreatif biologi siswa kelas eksperimen yang dinyatakan dalam N-gain = 0,38 termasuk kategori sedang lebih tinggi dari N-gain = 0,24 termasuk kategori rendah pada kelas kontrol. Pembelajaran PBP2K menghasilkan perubahan dimensi disposisi kreatif tertinggi pada dimensi *disciplined* dan terendah pada *collaborative* dan *persistent.* Hasil penelitian juga menunjukkan keterampilan berpikir kreatif siswa kelas eksperimen rata-rata sebesar 61,5 berbeda signifikan dari rata-rata kelas kontrol sebesar 38,8. Dengan PBP2K siswa mengalami peningkatan keterampilan berpikir kreatif lebih tinggi dengan N-gain 0,51 kategori sedang, sedangkan kelas kontrol peningkatan pada N-gain 0,25 kategori rendah. Peningkatan keterampilan berpikir kreatif tertinggi terjadi pada aspek berpikir luwes (*flexibility*) dan terendah pada aspek berpikir orisinal (*originality*). Implementasi model PBP2K juga mampu memicu siswa menghasilkan produk yang tergolong sebagai produk kreatif pada rata-rata kategori baik. Dengan demikian PBP2K perlu dikembangkan di SMA, karena memberikan kontribusi yang berarti pada pengembangan kreativitas ilmiah biologi siswa.

Kata kunci: PBP2K, praktikum penelitian kreatif, disposisi kreatif, keterampilan berpikir kreatif, produk kreatif.

THE ROLE OF BIOLOGICAL PRACTICUM BASED ON CREATIVE RESEARCH PROJECTS IN IMPROVING SCIENTIFIC CREATIVITY AT HIGH SCHOOL STUDENTS

ABSTRACT

This study aims to reveal the role of the Practicum model based on Creative Research Projects (PBP2K) in changing creative dispositions, improving creative thinking skills and increasing the ability to produce creative products in biology subjects in high school. The PBP2K model is designed in seven steps of learning, is a practicum activity in the student's creative research setting and is carried out in the form of group project activities. This research was conducted using a mixed method research embedded experimental design. The research subjects were 59 students (experimental class) and 34 students (control class) were taken using the cluster random sampling technique from a population of class X students of the Science Department at a public high school in Mataram, Lombok, West Nusa Tenggara, 2018/2019 academic year. The experimental class received learning from the Creative Research Project-Based Practicum (PBP2K) model and the control class with the verification lab model. The instruments used in the study consisted of a disposition questionnaire and a biological creative disposition position, a creative thinking skill test, a creative product assessment rubric, a student perception questionnaire on biology learning, an observation sheet, and a questionnaire to determine student responses to the implementation of the PBP2K practicum model. The results showed that in general, there was a significant increase in biological creative disposition between the experimental class and the control class. The increase in the creative disposition of students in the experimental class which is stated in N-gain = 0.38 is in the moderate category, which is higher than N-gain = 0.24, including the low category in the control class. The PBP2K learning resulted in changes in the highest creative disposition dimensions in the disciplined and the lowest in collaborative and persistent dimensions. The results also showed that the experimental class students' creative thinking skills were on average 61.5, significantly different from the control class average of 38.8. With PBP2K, students experienced higher creative thinking skills with an N-gain of 0.51 in the moderate category, while in the control class the increase in N-gain was 0.25 in the low category. The highest increase in creative thinking skills occurred on the flexibility aspect and the lowest on the originality aspect. The implementation of the PBP2K model is also able to trigger students to produce products that are classified as creative products in the good category average. Thus PBP2K needs to be developed in SMA, because it makes a significant contribution to the development of students' biological scientific creativity.

Key words: PBP2K, creative research practicum, creative disposition, creative thinking skills, creative products.

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