TRANSPOSISI DIDAKTIK PADA KONSEP LIMIT FUNGSI: STUDI FENOMENOLOGI HERMENEUTIKA DI PERGURUAN TINGGI

DISERTASI

Diajukan untuk Memenuhi Sebagian Syarat untuk Memperoleh Gelar
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PERNYATAAN KEASLIAN KARYA TULIS DISERTASI

Dengan ini saya menyatakan bahwa Disertasi dengan judul "**Transposisi Didaktik pada Konsep Limit Fungsi: Studi Fenomenologi Hermeneutika di Perguruan Tinggi**" ini beserta isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini saya siap menanggung sanksi/resiko yang dijatuhkan kepada saya apabila kemudian hari ditemukan adanya pelanggaran terhadap keilmuan dalam karya saya ini, atau ada klaim terhadap keaslian karya saya ini.

Bandung, 13 April 2023
Yang membuat pernyataan,

Rini Sulastri

KATA PENGANTAR

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Rini Sulastri

ABSTRAK

Rini Sulastri. (2023). Transposisi Didaktik pada Konsep Limit Fungsi: Studi Fenomenologi Hermeneutika di Perguruan Tinggi

Penelitian ini bertujuan untuk mengeksplorasi proses transposisi didaktik pada konsep limit fungsi di perguruan tinggi, mengkaji *concept image* dan *learning obstacle* pada konsep limit fungsi, dan menghasilkan desain didaktis sebagai pedoman dalam melakukan transposisi selanjutnya. Penelitian kualitatif dengan pendekatan *phenomenology hermeneutics* digunakan untuk mengeksplorasi proses transposisi yang melibatkan peneliti, dosen matematika, dan mahasiswa pada konsep limit fungsi dari salah satu perguruan tinggi di Aceh, yang dilakukan secara online. Mahasiswa yang dilibatkan pada saat tes tertulis berjumlah 16 orang, selanjutnya 9 mahasiswa dipilih untuk tahap wawancara semi terstruktur untuk memperoleh data terkait pemahaman dan pengalaman mereka dalam mempelajari materi limit fungsi. Penelitian ini menggunakan teknik pengumpulan data dalam bentuk studi dokumentasi, tes tertulis, wawancara, dan rekaman audio visual. Hasil penelitian ini diperoleh berdasarkan tahapan transposisi didaktik. Terdapat perbedaan urutan sajian materi limit fungsi pada kurikulum program studi dan buku teks kalkulus yang menjadi rujukan (*knowledge to be taught*), dan pada Rencana Pembelajaran Semester (RPS) dan bahan ajar yang digunakan dalam pembelajaran limit fungsi *(taught knowledge)*. Karakteristik bahan ajar dalam bentuk *powerpoint* ini sebagai media untuk mempermudah penyampaian materi secara virtual dalam kelas online berdasarkan buku rujukan yang digunakan. Pengetahuan yang diperoleh subjek (*learned knowledge*) tentang konsep limit fungsi sangat beragam. Hal ini juga menyebabkan munculnya kesenjangan konsep dengan pengetahuan ilmiah. Pengalaman belajar subjek ketika di sekolah dan selama belajar kalkulus menjadi salah satu penyebab terjadinya kesenjangan tersebut. *Learning obstacles* yang ditemukan dalam penelitian ini memuat ketiga jenis hambatan yaitu hambatan epistemologi, hambatan didaktik, dan hambatan ontogenik yang terdiri atas hambatan ontogenik konseptual, hambatan ontogenik instrumental, dan hambatan ontogenik psikologi. Selain itu, penelitian ini juga menghasilkan desain didaktis konsep limit fungsi berdasarkan kajian proses transposisi didaktik yang dilakukan dan juga temuan hambatan belajar pada konsep limit fungsi.

Kata kunci: transposisi didaktik, limit fungsi, *concept image*, *learning obstacle*

ABSTRACT

Rini Sulastri. (2023). Didactic Transposition in the Concept of Limit of Functions: A Hermeneutics Phenomenological Study in Higher Education

This study aims to explore the process of didactic transposition on the concept of limit of functions in higher education, examine concept images and learning obstacles on the concept of limit of functions, and produce a didactic design as a guide in carrying out further transpositions. Qualitative research with a hermeneutics phenomenological approach was used to explore the transposition process involving researchers, mathematics lecturers, and students on the concept of limit of functions of one of the higher education in Aceh, which was carried out online. There were 16 students involved during the written test, then 9 students were selected for the semi-structured interview stage to obtain data related to their understanding and experience in studying the concept of limit of functions. This study used data collection techniques in the form of documentation studies, written tests, interviews, and audio-visual recordings. The results of this study were obtained based on the stages of didactic transposition. There is a difference in the order in which functional limit material is presented in the study program curriculum and calculus textbooks that are used as references (knowledge to be taught), and in the Semester Learning Plan (RPS) and teaching materials used in learning limit functions (taught knowledge). The characteristics of teaching materials in the form of PowerPoint serve as a medium to facilitate the virtual delivery of material in online classes based on the reference books used. The knowledge obtained by the subject (learned knowledge) about the concept of limit function is very diverse. This also causes the emergence of conceptual gaps with scientific knowledge. The subject's learning experience at school and while learning calculus is one of the reasons for this discrepancy. The learning obstacles found in this study contain three types of obstacles, namely epistemological obstacles, didactic obstacles, and ontogenic obstacles consisting of conceptual ontogenic obstacles, instrumental ontogenic obstacles, and psychological ontogenic obstacles. In addition, this study also produced a didactic design of the concept of limit of functions based on the study of the didactic transposition process that was carried out and also the findings of learning obstacles on the concept of functional limits.

Keywords: didactic transposition, function limit, concept image, learning obstacle

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