Managing the learning quality in physics by e-learning improvement with collaborative education


Faculty of Informatics and Engineering, The University of Electro-Communications (UEC),
1-5-1 Chofugaoka, Chofu-shi, Tokyo 182-8585, Japan

e-mail address: kanenaga@team-edu.uec.ac.jp

The University of Electro-Communications (UEC) has personnel who have acquired practical capabilities in the engineering, e.g., information science, mechanics and electronics, as well as in the sphere of integrated arts and sciences that are broadly related communications. Staff members of the departments of mechanics and electronics educate general physics for 700 freshmen. Making use of these educative efforts effectively, we have organized a new working group, and have constructed Collaborative Education in UEC (CEUEC). We showed some analysis of this collaborative educational results in [1]. The CEUEC that consider students and teachers to be one team has four aspects: (1) Students and teachers share learning content and the achievement of physics. (2) Teachers share instructional materials and the teaching methods. (3) Students share experiences of understanding the essence of physics through enthusiastic discussion. (4) The university and society share educational content by publishing the results of student learning. By the CEUEC, it is our purpose to guarantee the educational quality.

We performed the CEUEC over several years, and conducted various investigations. As the results of our analysis to these investigations, we acquired the fact that our university’s students with a various learning history had no remarkable difficulty in their physics learning, if we offered the e-learning of contents suitable as educational materials which all students learn in common, and if we got students to have the same recognition about the achievement goal.

When performing the blended learning which uses together a conventional type lecture and the e-learning, it is most important to prepare the strategy to keep students’ learning motivation in the e-learning. Although there are various strategy such as the method of keeping students’ motivation by visualizing their learning outcome[2], we made the environment which students teach mutually by adopting the strategy getting to submit the report in which learning results by e-learning are reflected. The above-mentioned aspect (3) is promoted by this strategy.

In this presentation, we report on how students’ learning motivation in e-learning improved and how the learning results of students changed by our strategy.
