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# Development and Analysis of a Professional-Oriented CLIL Model for University Level Mechanical Engineering Education

**P. Haapanen<sup>1</sup>**

Lecturer, Language Centre\*  
paula.haapanen@lut.fi

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**D. Erent**

Lecturer, Language Centre\*  
david.erent@lut.fi

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**H. Eskelinen**

Docent, Mechanical Engineering\*  
harri.eskelinen@lut.fi

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**J. Wunderlich**

Lecturer, Language Centre\*  
jorg.wunderlich@lut.fi

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**J. Varis**

Professor, Mechanical Engineering\*  
juha.varis@lut.fi

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\*Lappeenranta University of Technology  
Lappeenranta, Finland

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**W**ith the prevailing misconception that knowing English 'is enough', the learning of languages other than English is in decline. This may prove to be a costly trend for future graduates in engineering. Teachers at Lappeenranta University of Technology (LUT) are attempting to address this by rethinking the way language instruction is delivered. In this paper, a concrete model for CLIL will be presented. Another purpose is to establish what profit mechanical engineering education gains from this model and finally, we also hope to formulate a model for the cost-estimation of these kinds of CLIL applications.

<sup>1</sup> P. Haapanen, paula.haapanen@lut.fi



For the purposes of the work being done at LUT, the model being adopted is what Coyle *et al.* (2010) name the A2 model, which focuses on the development of key concepts and learner autonomy [3, p. 18]. What is novel in this approach is that it is typically used with primary level education, whereas tertiary level education usually adopts more sophisticated models operating at advanced higher level of language proficiency in the vehicular (foreign) language. The focus of the CLIL work being done here has a *Languages Other Than English* (LOTE) approach, using French and German as the vehicular languages. As Coyle *et al.* (2010) state, they "...believe that CLIL as a promoter of LOTE has yet to reach its potential in the global arena... Pioneering work using a wide range of languages is gaining momentum and making a crucial contribution to developing CLIL pedagogies..." [3, p. 9]. We hope that our work will further contribute to this development.

Overall, the results with the first two rounds of the integrated course have been positive. In addition to satisfying principles of meaningful learning, there were other pedagogical benefits that arose, such as the peer support offered during team work by students with a higher proficiency in German. As for the benefits for engineering education, it was clear that through the process of collaborating on materials with the German teacher, the content teacher was better able to access new information in his area of expertise as well. Another interesting thing to note is that there was virtually no difference in the grades awarded in the integrated course compared to the non-integrated course but the dropout rate decreased from five to none by the second round of the integrated course. These results show the possible synergy and the value gained by incorporating languages into the content learning experience. ■

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