

INTERNATIONAL MARITIME MANAGEMENT: A DISTANCE- EDUCATION M.SC. COURSE FOR NAUTICAL OFFICERS ON BOARD SEA-GOING SHIPS

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Abstract The paper outlines the special instructional design of International Maritime Management (IMM) which allows active seafarers to combine their work on board vessels with a distance-education university degree course at Master's level (L7 according to the European Qualifications Framework, EQF). The highly flexible didactic concept of the degree course includes a series of pedagogical elements by which students can enjoy maximum transparency in their learning process. Sea times without a permanent access to the Internet do not hamper the learning progress while students are able to allocate study times in line with their professional duties on board and with family requirements. The general approach is to integrate the students' professional background into their studies in order to put theories into practice and to reflect on professional matters simultaneously. This integration means that the learners apply the theoretical knowledge they acquire throughout their studies to professional issues they are faced with in their daily work life. All modules are taught entirely in English language.

IMM has started in September 2017 after a five-year development and trialling phase. During this trialling period nearly 200 international students were enrolled as test students. The accompanying continuous monitoring process has led to substantial empirical findings of an extensive research into higher education. This research has not only contributed to a constant improvement of the didactic concept, it has also provided an insight into the learning strategies adopted by participating students.

The paper introduces the didactic concept of IMM including its integral elements of self-assessment to fathom out the students' perceived knowledge growth and open-book assessment which takes into account the professional environment of its learners. It also presents the findings of the empirical education research carried out including figures on student motivation, typical study workload of active seafarers and student retention issues.

Keywords: post-graduate distance education, combining work and study, didactics, instructional design

Introduction

When nautical officers complete their under-graduate studies of Nautical Sciences they usually start their primary profession on board seagoing ships. On average, they will continue to work at sea for a period of some five years after which they typically take on jobs in management positions on the secondary market ashore. The specific work conditions on board are characterised by long absence phases of several months. The extended sea time leads to a personal situation which causes women and men to judge their professional activities and family duties as incompatible with university studies (Caesar et al. 2015).

Around 80 percent of the world trade cargo is transported by ship (Allianz Global Corporate & Speciality SE 2016) leading to a high demand for qualified personnel capable to organise transport chains. Mobility of people and goods is a catalysing factor for a functioning economy. The world-wide transport chains require interdisciplinary solutions for international challenges. The professional area is subject to a highly dynamic development which makes an on-going learning process indispensable. The possibility of combining university studies with the target groups' work is especially attractive as post-graduate students do not have to give up their nautical career in order to obtain a higher university degree. Nautical officers can acquire practical experience during their active time as a seafarer while simultaneously pursuing an academic career to prepare themselves for a highly qualified position ashore.

In order to cater for this very special demand the Faculty of Maritime and Logistics Studies of Jade University of Applied Sciences has developed the study course of International Maritime Management (Jade HS 2017a). During a five-year development and trialling phase conceptual questions had to be answered first. Based on a target

group analysis and in contrast to existing maritime studies the course structure, the study plan and the curriculum were developed. The most important result of the first research phase is a didactic concept that takes into account the very special target student group (Nause et al. 2013). Among other topics it includes the organisation and combination of self-study periods and attendance phases. It also delivers a structure for the teaching and learning material. An exemplary implementation was carried out on a pilot module (John/Nause 2016; Nause/John 2014a). In all order to guarantee a successful implementation lecturers were assisted didactically and technically in the development of their modules. Following this trialling phase all other learning modules were produced. From the winter semester 2015 onwards all modules were offered, studied by test students and evaluated systematically (Nause et al. 2016; Jade HS 2015). The results of this evaluation were used to develop the study concept further.

For the first time in Germany the special requirements of the target student group of active nautical offices have been considered:

- Work on board seagoing ships is characterised by long and irregular phases of work and holidays. Nautical offices can be at sea for periods of up to six months. The didactic concept of the study course needs to enable learners to study the course contents flexibly and independently from their university.
- The students work on ships which are underway in different and constantly changing time zones. Consequently, the exchange of information can only be achieved through asynchronous means of communication.
- On board seagoing ships no permanent connection to the Internet is given, with the exception of emails which may be sent without attachments. The limited access to the Internet leads to the fact that students do not enjoy a continuous access to teaching and learning material nor to additional important information.

Theoretical considerations

The architecture of distance education courses has different requirements related to their didactics concept than study courses which are offered on campus. Students cannot be motivated and tutored directly by their lecturers. Consequently, a custom-tailored organisation is required which complies with the demands by the target student group with regards to an incorporated program of work and study.

At this point our didactics concept is summarised in a nutshell: The term didactics refers to the “theory and practice of teaching and learning” (Jank/Meyer 2002, p. 14 cited by Schlutz 2006, p. 81). Following the supply development model according to Schlutz (2006), question words are used to determine the programme to be planned and to figure out in how far the questions are mutually dependent (ibid, p. 78):

- For what: What utility does the programme offer?
- For whom: Which target group is addressed?
- Based on what: What are the participants’ prerequisites to achieve the learning objectives and qualifications?
- What: Which contents are delivered?
- How: Which organisational forms and (main) methods are applied?
- With what, Where: Which media and learning locations are used?

The special requirements are based on the distance of students to the study location. For this reason, a blended learning concept is applied whereby the distance is inversely proportional to the share of attendance time. This includes concepts which combine classic learning methods with e-learning to create a “useful overall concept” (Sauter/Sauter 2002, p. 246). The mixed methods approach combines distance learning and attendance phases as required by the correct characteristics of the target group (Zumbach 2010). In distance education, a virtual classroom is implemented by means of a learning management system (LMS). This learning platform provides administrative and content-based functions, it helps learners and lecturers to communicate, it controls learning processes, it delivers files and electronic assessment functions and it can be used for scheduling deadlines (Rippien 2012).

Didactic Concept

In order to provide for the requirements of the target group of active nautical officers, a purpose-built pedagogical concept needs to deliver a learning framework in line with their professional situation. This applies to the whole study course but also to the individual learning modules. Given the long distances between students and the study location a combination of distance education and on-campus education has been integrated into the learning and teaching concept. Here, asynchronous distance education is combined with short attendance phases to cover specific learning topics.

In the following the didactics concept of IMM is presented. The structure of this paper follows the design of the study course concept. After an introduction of the study course structure the individual module's structure is presented.

Degree Course

IMM includes a regular part-time study duration of five semesters. The study course provides students with a M.Sc. degree of 90 credits according to the European Credit Transfer System. The study course consists of eight modules of six credits each, one module of 12 credits and a Master's thesis of 30 credits:

All modules are completed with an assessment. This assessment may comprise essays,

No.	Learning Module	Credits
IMM01	Academic Research Methods	6
IMM02	International Maritime Law	6
IMM03	Enterprise Information Management	6
IMM04	Maritime Business	6
IMM05	Green Shipping	6
IMM06	Cost & Yield Management	6
IMM07	Maritime Management Applications	2*6
IMM08	Case Studies	12
IMM09	Master-Thesis	30

Figure 1: Study plan, own illustration.

written examinations, presentations with discussions or a business game. The Master's thesis also includes a presentation to the examiners. The selection and assignment of modules and assessment elements guarantee the achievement of different competencies which reach across different modules. In line with the international character of the maritime economy the whole study course is taught in English language.

A distance education Master's degree course needs to take into account that students will carry out their professional activities simultaneously with their studies. This aspect is reflected and supported throughout the whole IMM course. Students can choose modules flexibly so that they can combine their studies with their individual situation in life and in their professional environment. It is possible to postpone or interrupt parts of their studies should the individual professional and/or family situation require this. For

example, students can study one module only per semester or they can take semesters off.

IMM uses modern technology for distance education. A central instance is the virtual lecture theatre (i.e. LMS). Students access the electronic teaching and learning material by means of this platform which also guarantees the access to additional information. The LMS also provides a communication platform on the basis of asynchronous discussion forums which are used by learners and lecturers. The learning management system is also used to provide students with mandatory self-learning quizzes which are integrated into different modules with the aim to give evidence of the learning progress. Students can take these tasks as often as they like and independently from their time zone and location. The quizzes include questions which focus on reproducing knowledge, and the students' responses are immediately assessed by the system and related back to the students.

The concept of the study course takes into account the students' professional situation with respect to the number of attendance phases at the Faculty of Maritime and Logistics Studies in Elsfleth:

- Students start their first semester with an attendance phase in Elsfleth. During this first meeting the focus lies on meeting lecturers and learners and on reducing communication barriers. The attendance phase also encourages students to create learning groups and networks. An introduction to the LMS is given, the electronic library is presented and the structure of the study course modules is introduced. Students also learn how to cope with the central requirement of self-organisation in their distance education studies.
- In the subsequent attendance phases students sit examinations, participate in an electronic business game and deliver presentations and discussions. The organisation and implementation of the presentations resembles an academic conference. Furthermore, students are prepared for the Master's thesis by means of a seminar. The seminar introduces the time frame and structure of the thesis, first questions can be discussed and support can be given with regards to the definition and thematic approach of diverse issues.

Students decide for themselves if they travel to Elsfleth once, twice or three times to take one, two or three examinations per attendance phase. The attendance phases are offered twice a year, always at the beginning of the summer and the winter semester: they take place on the weekend before 1 March and on the weekend before 20

September. This is the traditional start of the summer and winter semesters at Jade University of Applied Sciences.

Another element is the increased permissibility of professional academic education as well as the support of lifelong learning as central elements of the Bologna process (BMBF 2017). For this purpose a structured cross-crediting method has been developed (Jade HS 2017b). In IMM competencies achieved in tertiary education as well as outside an academic environment can be cross-credited as regular modules. The aim is to reduce any redundancies. This means that competencies acquired in previous studies do not have to be studied again. Potential students can ask to have their competencies cross-credited prior to beginning their university studies. The resulting shorter study time is useful for students with a limited time budget due to professional and family duties. The shorter time also facilitates the decision to take on the task of distance education studies.

Learning Modules

Following the didactics concept of IMM, all modules incorporate a homogeneous structure. The uniform module design assists students in their orientation and provides a more accessible study process of the whole study course (Nause/John 2014b).

All learning materials are available right from the start. The LMS provides course books, additional information and the open-book assessment questions. In a student-centred approach, learners acquire the theoretical knowledge themselves by means of the provided course books. These scripts are mainly didactically prepared texts (Grassl 2013; Holmberg 2005) which are made available to students in a PDF format and as e-books. The course books start off by explaining the intended learning objectives from a student's perspective. Then, the individual chapters are presented which are organised in a way that permits learners to make progress in relatively short learning phases. These short phases aim to enable students to combine their studies with their professional and private life. All chapters conclude with reflection questions so that students are encouraged to learn actively and independently. The reflection questions provide a linkage to the students' existing competencies which allows them to construct and apply knowledge (instrumental competencies). Individual application cases are raised and discussed in Internet for asynchronous communication. During these learning processes, students exchange ideas with their peers and learn from the different (professional)

backgrounds. Lecturers accompany them in their learning processes (communicative competences).

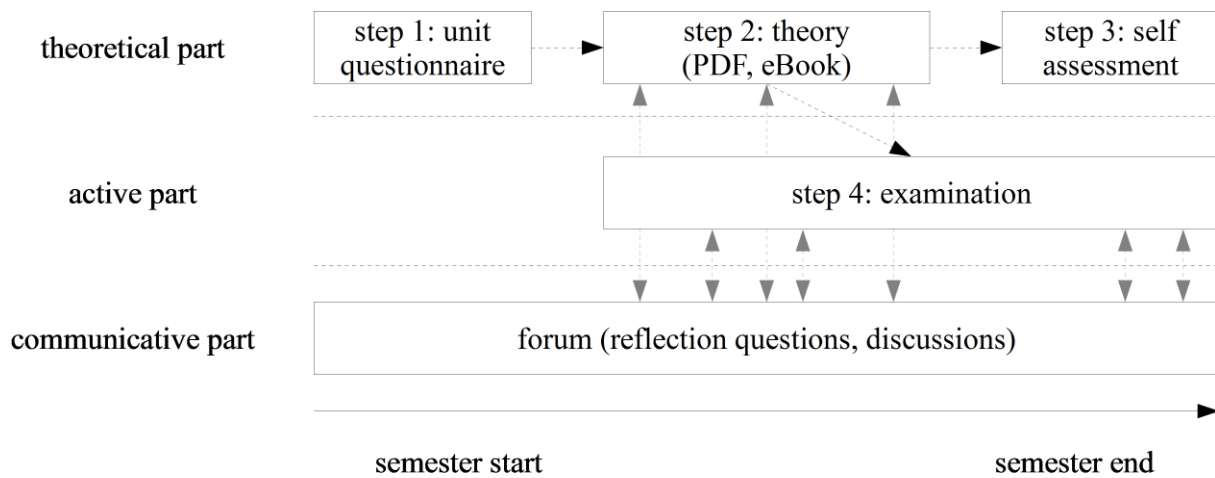


Figure 2: Learning module structure, own illustration.

Right from the start of each module, students are confronted with the module assessment, i.e. they know the general assessment questions and can use them for their individual learning curve by integrating the tasks into their professional context. By covering student-centred topics based on authentic issues from their professional environment students can link these with the theoretical constructs provided by the different modules thus acquiring the respective competences systematically. Taking into account existing knowledge and the students' professional background encourages learners to reflect on their own actions. Hence, a close relation of theoretical and practical considerations is established. This approach is complemented by realistic case studies and an electronic business game. The aim is to mitigate the inherent risk of traditional teaching whereby students firstly acquire basic knowledge and methodologies and then construct a possible application for them (Webler 2002, p. 221).

At the beginning of each module, students evaluate their knowledge by means of anonymous surveys on the respective learning objectives. Here, learners assess their individual knowledge level on a Likert scale. This approach is very reliable and it connects the new learning objectives with existing competences (Hattie 2009, p. 44f). The magnitude of the perceived learning effect can be calculated and used as one indicator for the module's "success". The survey also helps students to understand the learning objectives of the different modules and to estimate the required effort to achieve them.

Conclusion

For the first time in Germany, the study course of International Maritime Management assists active seafarers on board sea-going vessels in pursuing a career in the transport and logistics domain ashore. An individual personal development is targeted by means of a distance-education course at Master's level which combines the students work environment with the acquisition of new competences. The study programme started in September 2017 after a two-year trialling phase with nearly 200 volunteering test students. Some of the test students have successfully passed all modules while others were only interested in specific learning modules. The continuous evaluation process has shown that the course's concept is aligned with the special requirements of the target student group: *International Maritime Management can be studied by active seafarers while they work on board sea-going ships*. Nevertheless, the testing and trialling phase has also pinpointed scope for further development: Planning their studies carefully plays an even more important role for working students as anticipated: a clear need exists for communicating study progress, assessment requirements and dates and deadlines at a very early stage. Mature working students possess a high expertise of skills and competences acquired on board ship which can be integrated into their university studies. On the other hand, they have high demands as to the quality of their studies. The testing and trialling phase has been able to prove that despite the high discipline required from students by working and studying simultaneously, a custom-tailored study programme is indeed capable of providing them with the right means to make further progress in their academic and professional career.

References

- Allianz** Global Corporate & Specialty SE (ed.) (2016): *Safety and Shipping Review 2016*. Munich.
- Bundesministerium** für Bildung und Forschung (BMBF) (2017): Der Bologna-Prozess – die Europäische Studienreform. URL: <https://www.bmbf.de/de/der-bologna-prozess-die-europaeische-studienreform-1038.html> (Accessed on: 08 May 2017).
- Caesar**, L. D., Cahoon, S. & Fei, J. (2015): Exploring the range of retention issues for seafarers in global shipping: opportunities for further research. *WMU Journal of Maritime Affairs*, 14(1), pp. 141-157.
- Grassl**, R. (2013): Lehren an der Tastatur – Autorinnen und Autoren von Studienheften als Lehrende in der Distance Education. In: E. Cendon, R. Grassl & A. Pellert (ed.), *Vom Lehren zum Lebenslangen Lernen: Formate akademischer Weiterbildung* (pp. 117-134). Münster.

Hattie, J. (2009): *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London & New York.

Holmberg, B. (2005): *The Evolution, Principles and Practices of Distance Education*. Oldenburg.

Jade Hochschule Wilhelmshaven/Oldenburg/Elsfleth (ed.) (2015): *Evaluationskonzept für den geplanten Weiterbildungsstudiengang „International Maritime Management“ (M.Sc.)*. Elsfleth.

Jade Hochschule Wilhelmshaven/Oldenburg/Elsfleth (ed.) (2017a): International Maritime Management (M.Sc. distance study). URL: jade-hs.de/imm (Accessed on: 08 May 2017).

Jade Hochschule Wilhelmshaven/Oldenburg/Elsfleth (ed.) (2017b): *Leitfaden zur Anrechnung von (außer-)hochschulisch erworbenen Kompetenzen auf den geplanten Weiterbildungsstudiengang „Maritime Management Online“ (M.Sc.)*. Elsfleth.

John, P & Nause, N. (2016). Academic Research Methods. Course book for the degree course in International Maritime Management, Department of Maritime and Logistics Studies, Jade University of Applied Sciences. URL: https://www.jade-hs.de/fileadmin/fb_seefahrt/downloads/Studieninteressierte/IMM/Course_Book_Academic_Research_Methods.pdf (Accessed on: 30 May 2017).

Nause, N., John, P., & Wandelt, R. (2013): Curriculares Design des weiterbildenden Fern-Masterstudiengangs „Maritime Management“. *Personal- und Organisationsentwicklung in Einrichtungen von Lehre und Forschung*, 8(2+3), pp. 83-88.

Nause, N., John, P. & Klimmek, E. (2016): Lehrveranstaltungsevaluation in Weiterbildungsstudiengängen am Beispiel des geplanten Studiengangs „Maritime Management Online“. *Das Hochschulwesen*, 64(5+6), pp. 163-169.

Nause, N., & John, P. (2014a): How can a didactic guideline assist lecturers in adopting a learning outcome-centred approach in distance education learning units? In E. Cendon, & A. Prill (ed.), *Handreichung Lernergebnisse Teil 2 – Anwendungsbeispiele einer outcomeorientierten Programmentwicklung* (pp. 21-36). Berlin.

Nause, N., & John, P. (2014b): How can the didactic design of learning units be improved on the basis of a survey among participating students? In E. Cendon, & L. Flacke (ed.), *Handreichung Kompetenzentwicklung und Heterogenität* (pp. 81-91). Berlin.

Rippien, H. (2012): *Bildungsdienstleistung eLearning: Didaktisches Handeln von Organisationen in der Weiterbildung*. Wiesbaden.

Sauter, A. M.; Sauter, W. (2002): *Blended Learning: effiziente Integration von E-Learning und Präsenztraining*. Neuwied.

Schlutz, E. (2006): *Bildungsdienstleistungen und Angebotsentwicklung*. Münster et al.

Webler, W. D. (2002): Modellhafter Aufbau von Studiengängen. *Das Hochschulwesen*, 50(6), pp. 216-223.

Zumbach, J. (2010): *Lernen mit neuen Medien: Instruktionspsychologische Grundlagen*. Stuttgart.