

Leveraging a visible learning process in higher distance education: a case study in International Maritime Management, M.Sc.

Dr. Nicolas Nause ^{1,*}, Russell H. Greenwood ¹

¹ Jade University of Applied Sciences Wilhelmshaven/Oldenburg/Elsfleth, Germany

* Corresponding author: nicolas.nause@jade-hs.de; Tel.: +49-4404-9288-4309.

Abstract: The article promotes “Strengthening Lifelong Learning in MET through Innovative Methodologies Application” and advocates for its implementation with distance learning approaches. The maritime domain is changing but it is not only the workplace aboard ships itself that puts very high demands on ships’ crews and fosters incompatibility with family life. The effect is particularly intensified when seafarers become lifelong learners and the workplace aboard also becomes a place of learning; special requirements for educational programmes result. Based on this, the case study of International Maritime Management from Jade University of Applied Sciences (Germany) is presented, with which the compatibility of these aspects succeeds, so that both potential for further improvement and especially transferability to other members of the International Association of Maritime Universities can be shown. Moreover, this approach is particularly promising because the effects of COVID-19 have hardly affected teaching and learning here. Overall, it is about to generalise findings to the wider settings of MET and research.

Keywords: maritime education and training, distance education, lifelong learning, nautical officers

1. Introduction

The international shipping business transports more than 80% of the global trade by volume (UNCTAD 2021). The Seafarer Workforce Report (BIMCO 2021) estimates “that 1.89 million seafarers currently serve the world merchant fleet, operating over 74,000 vessels around the globe.” Furthermore, it warns of a shortfall of approximately 90,000 officers by 2026.

In the beginning, the shipping industry employed a largely unskilled, labour-intensive workforce, which over the years has experienced a massive transformation. The impact of decarbonisation and digitalisation will have a further impact not only on the shipping industry (Stopford 2022) but also on the demand and education of the global maritime workforce (Duru 2019). The same development applies to MET and research (IAMU 2019). We find, for example, an increasing number of universities which offer undergraduate as well as postgraduate maritime degree courses leading not only to a navigational certificate of competency (CoC) but also to a university degree. This also resembles one sub-theme of this conference: “Strengthening Lifelong Learning in MET Through Innovative Methodologies Application”.

Besides, changing understandings of roles and values have an impact on the times seafarers (from First World countries) spend aboard ships. Sea times become shorter as people look for their move ashore. They strive to make the best use of their available time. With regard to one’s own work and life planning, it is increasingly about time wealth, time sovereignty, downshifting and ‘new work’ (Bergmann 2019). Relevance in terms of job satisfaction, performance and commitment as well as the reduction of stress prevails. Furthermore, there are developments and social changes due to mega trends (especially globalisation, digitalisation and emancipation). Considering all this, the question of staying aboard or leaving the sea behind periodically or even permanently confronts seafarers (Albert et al. 2016). This leads to two different discussions: the need of 1) further education and lifelong learning (LLL) for seafarers for their future occupations in the company management ashore and 2) a new skill set for future seafarers aboard modern ships.

Even if both topics are very important for the shipping industry, the emphasis within this article lies on the former. Taking all above-mentioned aspects into account, employees in general but seafarers in particular have to strengthen their skills with regard to self-management, LLL as well as finding the right work-life-balance. Based on this, the following research questions are in focus: Why are seafarers interested in continuing their own (lifelong) learning? What gives them the stamina needed for successful part-time studies aboard seagoing ships and how can such a programme facilitate seafarers' needs? Which favourable, but also inhibiting factors result from an on-board learners' viewpoint?

To arrive at the answers, this article consists of four chapters. The introduction (chapter 1) includes the research objectives and research questions. Following on from that, related work and definitions of this study are briefly elucidated (chapter 2). Chapter 3 presents the case study of International Maritime Management (IMM), which includes, due to limited scope, the methodology, data collection, data analysis and discussion. The article ends with a summary and conclusion (chapter 4), which not only includes key learnings and further research needs but especially shows potential for transferability to other IAMU members.

2. Related Work and Definitions

2.1 Lifelong Learning

LLL is “an organizing principle or ‘master plan’ for a potentially new approach to teaching and learning” (Slowey & Schuetze 2012, p. 3). Thus, two basic ideas form the overall concept: People learn throughout their whole life and they do not only learn in formal educational institutions but also in the workplace and social environments. In line with that, the European Commission (2001) defines LLL as “*all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective.*” (p. 9, emphasis in original) LLL is voluntary and self-motivated and thus not compulsory. Therefore, self-taught learning comes to the fore and we find different learning situations in terms of the dimensions of place, time, and degree of structure, intention, certification as well as learner-teacher relationship. All learning activities pursue to improve the personal development, gain new qualifications, and add new skills and so on. In the light of above-mentioned changes, it is not sufficient for the future to concentrate on a rigid concept. Instead, concepts are needed which enable people to acquire skillsets of self-competence, responsibility and autonomy over time in order to be able to cope with ambiguity, new situations as well as changing challenges and requirements (Richards 2020).

2.2 Distance Education versus Emergency Remote Teaching

People learn by attending different education programmes (on-campus and distance degree courses, for example). This article focuses on distance education, which is often defined as “institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors.” (Schlosser & Simonson 2010, p. 1) Albeit the focus is on distance education in this article, we assume, that study courses and learning programmes in general are well planned irrespective of their design (see above). However, within the recent two years we have seen that the impact on education of the COVID-19 pandemic has been tremendous (and continues to be). As a result, the appropriate term of Emergency Remote Teaching evolved in the wake of the global crisis in the first half of 2020 for ad-hoc solutions (Hodges et al. 2020). They summarise the situation as follows: “Faculty might feel like instructional MacGyvers, having to improvise quick solutions in less-than-ideal circumstances [... and] many instructors will understandably find this process stressful.” (for this transition in the maritime context see Bartusevičienė et al. 2021) Further, in this context it is very important that “[w]ell-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster.” (Hodges et al. 2020; for impact, experiences and measures taken by MET institutions see IAMU 2021; 2022).

3. Case Study: International Maritime Management

3.1 Methodology

In the following, the methodology of the case study as research method and the reasons for its choice are briefly given. According to Yin (2018, p. 16), “the twofold definition—covering the scope and features of a case study—shows how case study research comprises an all-encompassing mode of inquiry, with its own logic of design, data collection techniques, and specific approaches to data analysis.” Moreover, a *good* case study

should have the potential to, among others (Yin 2018; Atkins & Wallace 2012): provide new or unexpected insights, challenge assumptions, and propose tangible approaches of action to solve given challenges or open up new discussions for future research. The idea is, unlike quantitative or experimental research, not to make use of a random or representative sample but understand the case in-depth and shed light on a new or given problem. In line with that, the group of nautical officers as lifelong and distance learners will be discussed and a brief introduction of the IMM degree course including its didactic concept will be given. Then, quantitative and qualitative data is presented and results are discussed in order to gain new findings and knowledge.

3.2 Nautical Officers as Lifelong and Distance Learners

Nautical officers (from First World countries) usually spend a few years aboard seagoing vessels before striving for adequate employment opportunities ashore. In preparation for this step, they express an interest in postgraduate degree programmes that can be studied part-time and alongside work; face-to-face courses are not compatible with the requirements of their jobs (Nause et al. 2018): nautical officers are absent for long and irregular times, ships and their crews are located in different (and changing) time zones, Internet services are typically not available, although emails (without attachments) can usually be sent and received. Based on that, (deck) officers constitute a group of lifelong learners. They have already acquired not only a CoC but often a Bachelor’s degree, too. Besides, they may have a family as well as other commitments and interests.

The definitions and discussions above are not only the rationale for this article, but they were also the trigger and starting point for the development of the IMM distance degree course in 2012. So far, graduates of Nautical Sciences undergraduate degree courses can continue their education with maritime postgraduate on-campus degree courses *or* start their career aboard. Since the introduction of IMM, they can start their career at sea and thus gain work experience, whilst *simultaneously* achieving a Master’s degree by means of part-time studies. IMM is the first such course in Germany to support mariners in this way. Based on that, exemplary career paths of nautical officers are shown schematically in figure 1 taking seagoing service times (times for holidays are excluded) for certification according to Chapter II of the Annex to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW), into account:

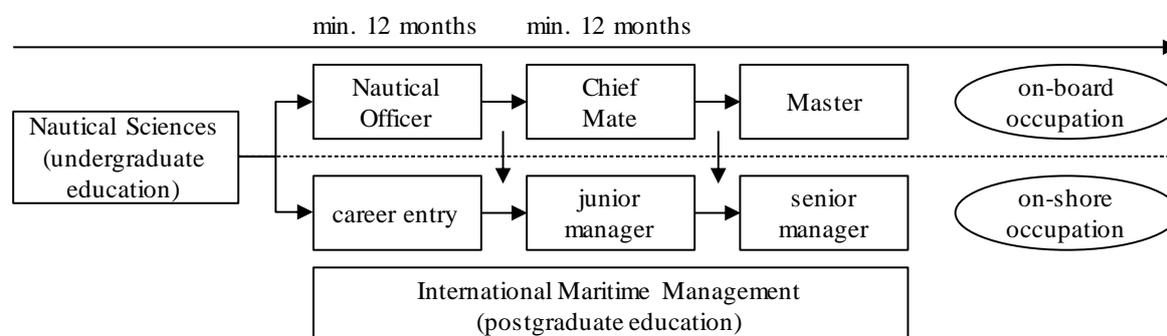


Figure 1. Exemplary career paths of nautical officers, source: Nause 2022, p. 47. (Note: the individual duration of the phases may vary. The figure does not reflect this.)

For the IMM programme and this article, respectively, two groups (out of seven; Slowey & Schuetze 2012) of lifelong learners are of importance. The first group are ‘recurrent learners’. They return to the university in order to achieve a second (usually higher) academic degree and/or additional, diversified qualifications. In this context, nautical officers have acquired their CoC and Bachelor’s degree and return to the university in order to achieve a Master’s degree. The second group are ‘refreshers’. They might have achieved a Bachelor’s degree or even a Master’s degree in the past but wish to renew and/or expand their knowledge at a university.

3.3 Didactic Concept

IMM caters for the unique requirements stated above. Therefore, a distance-learning concept applies, which is supplemented by a kick-off attendance phase; participation is strongly recommended but not mandatory. Therewith, the characteristics of the target group are in the foreground, which is of utmost importance (Means et al. 2014). The kick-off event takes place at the very beginning and serves for familiarisation purposes with the didactic concept, IT infrastructure and systems, getting to know each other, and networking, etc. This facilitates the students to start their studies as smoothly as possible. Furthermore,

within the degree course different elements of flexibility apply (Li & Wong 2018). First, the course duration is flexible. The 90 credit points (according to the European Credit Transfer and Accumulation System; European Commission n.d.) degree course encompasses nine learning modules plus thesis which in total equals three semesters (1.5 years) full-time studies. As IMM students are studying alongside work, approximately five semesters (2.5 years) part-time studies is the average value. This flexible approach allows students to deviate upward and downward in such a way that it suits their individual situations. Moreover, students can set priorities in terms of content within the learning modules in a given setting (see below).

All learning modules have a uniform design in order to facilitate students' learning. At the very beginning of the learning modules, all relevant information is available. This includes the study text from the lecturers (*theoretical part*), further reading, self-assessment tasks and examination tasks. Therewith, students have the possibility to apply their individual practical questions and projects from their professional life, which they are interested in (*active part*). Alternatively, individual learning modules build on practical examples and business cases. This approach also enables people to study, even if they hide their studies from their employer or employers do not support students' studies for whatever reason, for example. With this approach, a theory-practice transfer becomes possible, whereby on the one hand the theory is implemented directly in the professional practice and on the other hand professional activities are reflected in a scientific manner which leads to mutual benefits. Throughout the semester, lecturers accompany students. Moreover, students exchange ideas with their peers and lecturers by means of forums (*communicative part*).

3.4 Data Collection, Data Analysis and Discussion

Within the two-year period of validation (September 2015 to September 2017), 213 test students participated in periods ranging from one to four semesters (Nause et al. 2018). 98 participants (46%) were actively participating and thus able to finish learning modules offered, eleven test students (5%) completed one or two learning modules and terminated their participation afterwards (dropouts), and 104 persons (49%) enrolled for the test phase but did not complete any learning module at all (non-starters). As per today, 221 ordinary students study or have studied IMM since its official start in September 2017: students ($n = 112$; 51%), graduates ($n = 70$; 32%), and dropouts ($n = 39$; 17%).

The student cohort consists of female (28%) and male (72%) students. IMM attracts not only German citizens, as 18% of the participants have a non-German background. International students are from Ireland, Spain, Poland, India and The United States of America, among others. In addition, students' backgrounds are heterogeneous: most of them started with a Bachelor's degree in Nautical Sciences (76%), which corresponds to the target group description. Alternatively, they have achieved a first university degree in Maritime Logistics (12%) or other areas (12%). Almost half of the students with a degree in Nautical Sciences (45%) work aboard ships, 14% of them with the rank of a Master.

The first author of this article is the co-ordinator of the IMM degree course. Therefore, this case study refers to pedagogical principles, day-to-day practice, evaluation results and conversation with both, students and lecturers. Based on that, this paragraph will discuss the most important aspects. Single aspects of this paragraph are discussed in more detail elsewhere (Nause 2022).

Experiences show that the compatibility and interaction between the different life domains (especially professional activities, further education, family and leisure) represent a (*the*) central challenge in terms of part-time studies in general and for seafarers in particular. This aspect is especially important because very long work-intensive phases aboard alternate with vacation phases ashore. Work at sea or family and friends as well as leisure time at home have the highest priority, followed by personal time and studies (in descending order). Observations and interviews show that learners' motivation (learning outcome/extrinsic versus learning process/intrinsic) differs, but has a major impact on balancing the different activities and stamina needed for successful completion of part-time studies. This aspect is particularly important because of individual time expenditure and time management (activities of the different life domains compete with each other). Moreover, the understanding of roles within the family plays a greater role today than in recent times. In addition, learners may have achieved their first university degree a few years ago, thus the aspect of learning to learn is of utmost importance. This is especially important because distance learning (besides other duties and interests) puts much higher demands on the learners in terms of responsibility and autonomy compared to the very structured undergraduate studies of Nautical Sciences, which go back to STCW requirements. Thus, a necessity is attendees' ability and willingness to change from knowledge consumers to active learners. In particular, data

shows that students can work on the learning modules in parallel to their private and professional activities, although writing the Master's thesis proves to be a particular difficulty and regularly leads to an interruption (one or more vacation semester(s)), which accompanies an extension of the study period.

Besides, stress plays a decisive role, even if situations aboard differ greatly depending on the individual rank, shipping market, trade, ship, etc. Students also report that coincidences could facilitate or complicate the individual situation further (e.g. port-sea-ratio). As well, the individual perception of stress by people is different, too. Therefore, (preferred) segmentation and very high integration may be conceived as two ends of a continuum along which peoples' strategies lie in terms of boundary management (Ashforth et al. 2000). Further, seafarers describe their job and life on ships as a recurring routine and monotony. Simultaneously, the sea itself and all its unpredictability are always a constant concern. Thus, nautical officers may see learning activities as useful leisure time, positive distraction as well as a good possibility to break out of their everyday life at sea or to spend parts of their free vacation time as a 'meaningful leisure activity' at home.

4. Summary and Conclusion

Key findings are subsequently interpreted in the conceptual context and critically appraised, which also includes an outlook and future research areas. Moreover, knowledge gained from the data given is also presented, which aims at putting forward ideas and questions for further improvement not only for the IMM programme, but in particular for MET and research in general, including transferability to other IAMU members.

The overall experience is that IMM is crisis proven. There was no need for Emergency Remote Teaching activities in this degree course according to the COVID-19 pandemic. Pandemic-related consequences hardly affected IMM contrary to most other degree courses of Jade University and most universities in Germany or even around the globe. Jade University has been subject to restrictions and therefore it was not possible to carry out the attendance phases in person but rather by means of video conferences instead; participation in person at the kick-off event (voluntary but recommended) and three learning modules (mandatory) was planned. Therewith, IMM serves as an example of good practice in this regard and we see further development in combining the pros of both worlds (on-campus and distance learning designs) for different purposes in the future. Experience shows that face-to-face participation is dispensable and the acceptance of new(er) forms of teaching and learning including examination/assessment has increased, as there are fewer concerns from the teaching body; this is particularly noteworthy because resistance to change and a wait-and-see attitude usually characterise this topic. In other words, for educators, the COVID-19 pandemic has rapidly opened new questions and developed new perspectives. Suddenly, lecturers have experienced a steep learning curve while they implemented all sorts of digital tools and materials in their everyday work. In the light of the ongoing reaccreditation process in line with German regulations, this forced experience has proved to be an opportunity for and driver of innovation: IMM does not include mandatory attendance anymore in terms of examination, which has increased its overall flexibility for the entire student group and made it more attractive from an international students' angle. Moreover, experience can be transferred to on-board trainings and to (on-campus) degree courses, e.g. in times of lecturer absences for whatever reason or the use of flipped classroom settings. Besides, it is increasingly important that (future) graduates are able to organise and conduct video conferences.

In conclusion, it is time to implement some innovations in MET: 1) besides offering full Master's degree courses, it is necessary to also offer parts of it as short courses with a postgraduate diploma or postgraduate certificate upon completion. This especially serves the needs of 'refreshers' in the context of LLL who cannot or do not want to study a full degree course for various reasons but wish to renew their knowledge in a special field of interest. 2) Further strengthen the role of women in the maritime industry in line with social change but also in order to meet the training needs of the onshore and offshore labour market. 3) Develop education programmes in the context of LLL aiming to further educate and promote seafarers from ratings to officers in order to keep up with technical and technological developments as well as the predicted labour shortage. 4) Some students write their Master's theses in collaboration with other companies than their employers. This is a way of looking for and getting to know a potential new employer, but often constitutes the starting point for the step ashore. Further studies of career paths taken in shipping may reveal further knowledge and bear potential for the maritime workforce. 5) The virus that causes COVID-19 is changing, among other things, teaching and learning apace. Hence, we should think of flexible learning strategies for MET and keep them for the future. 6) Concentrate on actions to bring the unchangeable characteristics of occupations at sea in line with today's requirements in order to secure a skilled labour-force on board and on shore in the long term.

7) Determine and consider the view of companies with regard to LLL in the field of tension between a shortage of workers ('war for talents') and an increasing demand on employees, e.g. they have to do more work.

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