Developing a MOOC for teaching employability skills to foreign students in Germany

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DEVELOPING A MOOC FOR TEACHING EMPLOYABILITY SKILLS TO FOREIGN STUDENTS IN GERMANY

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Abstract

The outcomes of educating foreign students at German universities falls behind stakeholder expectations. While foreign students are typically interested in staying in Germany to work, two-thirds do not succeed in securing full-time employment. This paper introduces the Employability Skills MOOC (Massive Open Online Course) that aims at alleviating this problem by using a scalable online medium to enhance especially foreign learners' competencies needed for career success in Germany. The paper reviews the course concept and design, learner perceptions of the design, as well as the MOOC development project. The paper concludes by summarising lessons learned during the project emphasising modular course design, interactive exercises, practices to enhance teacher presence, and early course promotion via a variety of channels.

Keywords: Graduate employability, MOOCs, online learning, international education, Germany

1   INTRODUCTION

Finding employment in a foreign country is a challenging task. Not only must candidates have relevant occupational expertise but also the ability to find suitable jobs and convince potential employers of their value. In addition, continuing success at an employer's service depends, for example, on being able to manage one's work, communicate with others and find and process information. Such generic competencies are a crucial component of one's ability to achieve career progress ([1], [2]).

Foreign students and graduates seeking employment in their host country typically face the parallel challenge of learning competencies and integrating to the host society, job market and work culture. The experience of working as member of an organisation can differ significantly between countries and cultural domains. One challenge is that when the need to adapt to the new work culture becomes pressing to a foreign student, he or she is typically no longer within the reach of the university and must therefore deal with the situation independently. Even if when such learning is included in higher education, the learning may not be effective because the students have no opportunity to apply and reflect the competencies in practice at the time of learning or soon thereafter.

The Employability Skills MOOC was developed and launched in 2015 to provide German universities' foreign students a scalable, free and easily available resource for learning generic competencies needed in particular at the early stages of their careers in Germany. The MOOC was structured initially in four chapters of content, covering knowledge and skills in planning one's career, acquiring a job and succeeding in the German work environment. The MOOC was developed with further improvements and extensions on mind, as discussed in section 4. Basic information for the initial version of the MOOC is presented in Table 1.

The motivation to create the Employability Skills MOOC was an observation that educating foreign students at German universities often fails to meet stakeholder expectations. While surveys indicate that even 80 percent of foreign students desire to work in Germany after graduation, only 25 percent succeed in finding full-time employment ([3], [4]). This loss of potential workforce is due to three factors. First, only 59 percent of new foreign students successfully complete the studies [5]. Second, of the successful graduates, only 44 percent stay in Germany [6]. According to Hanganu and Hess [3], most graduates left Germany because they could not find employment within the period they were allowed to stay in Germany to look for work. Third, of those graduates who stay in Germany, 32 percent remain unemployed, underemployed or inactive due to personal reasons ([7], [8]). In summary, German universities must attract about five foreign students in order to provide the labour market with one full-time graduate employee, representing a significant waste of educational resources.

Table 1. Employability Skills MOOC basic information

Course URL	https://iversity.org/en/courses/employability-skills
Production period	April – August 2015
Launch	03 August 2015
Duration	7 weeks
Participant workload	15 hours (videos and exercises) + 10 hours (project assignment)
Examination	Project assessment and personal feedback for certificate track participants
Participants	About 4,400, thereof about 400 active learners
Participant locations top 10	Germany (18%); India (10%); Pakistan (5%); Philippines (4%); Nigeria (4%); USA (4%); Bangladesh (3%); Ghana (3%); Egypt (2%); UK (2%)
Participant education levels	Graduates (61%); undergraduate students (22%); non-graduates (17%)
List of chapters (1 chapter = 1 week of learning)	1 Introduction; 2 Career identity; 3 Job application skills; 4 Workplace analysis; 5 Psychology of employability; 6 Project assignment; 7 Reflection and feedback

One important reason for the weak outcomes may be foreign graduates' insufficient generic skills and knowledge needed for career success in Germany. While German language skills are crucial for most employment, Kapanen *et al.* [9] emphasise three other competency areas important for the success of foreign graduates seeking private-sector employment: job acquisition skills, career identity, and integration to the German professional culture. Universities across Germany have observed this issue and begun developing programmes and instruments for enhancing foreign students' educational outcomes. Since 2002, such initiatives are centrally funded within the STIBET and PROFIN programmes of the DAAD (German Academic Exchange Service) [10]. The sponsored pilot projects include advisory, seminars, social events, praxis learning and online tools. Therefore, the Employability Skills MOOC is an initiative that belongs to a broader context of ongoing work.

The aim of this paper is to introduce the Employability Skills MOOC in order to provide a praxis perspective on the use of MOOCs in teaching generic competencies in higher education. Section 2 of the paper introduces the initial MOOC concept, discusses its design and reviews learner perceptions of the design. Section 3 presents the project that was undertaken to create, promote and facilitate the MOOC. Finally, section 4 formulates conclusions and proposes further work.

2 THE MOOC DESIGN

This section discusses three aspects of the Employability Skills MOOC. Section 2.1 presents the concept and learning objectives. Section 2.2 details the course design including content, pedagogy, exercises and assessment. Finally, section 2.3 reviews learners' perceptions of the course design.

2.1 Concept and learning objectives

The initial idea of the Employability Skills MOOC emerged from the authors' experiences in educating foreign business and engineering students at the HTW Berlin. The needs that foreign students typically articulate focus on immediately applicable, low to intermediate level skills such as finding job positions, writing application documents and communicating with employers. However, further inquiries have revealed a broader range of competency issues. The four potential improvement areas identified by Kapanen et al. [9] are depicted in Fig. 1 and discussed below.
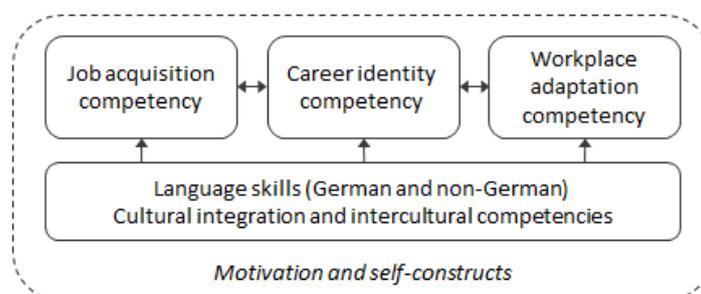
Figure 1. Foreign students' employability competency areas

Sufficient language skills and cultural understanding form the foundation for other aspects of employability. Without them, it would not be possible to find jobs, apply for them or work with others. Regardless of the growing importance of international orientation in business, the language at most workplaces in Germany is German. Of foreign graduates, typically an effective operational proficiency in German and understanding of the German work culture is expected. However, because foreign graduates are often assigned to international work contexts, their employability can also depend on other languages and intercultural competency. According to Stifterverband [5] and Sykes [4], employers perceive foreign graduates' strengths to be non-German language proficiency and intercultural competencies. Nevertheless, German language and culture are typical hurdles especially for graduates of programmes taught in English. It was among the MOOC learning objectives to give the participants a realistic understanding of the role of language and culture in employability.

Career identity competency refers to the ability to answer broad questions about one's career in order to form a strong career identity. Fugate *et al.* [11] define career identity as 'one's self-definition in the career context.' Individuals with strong career identity competency are aware of the implications of their personal strengths and weaknesses on the labour market; can present themselves professionally to employers; set meaningful and realistic career objectives; and plan actions to pursue those objectives. Career identity is the foundation of self-efficacy, self-confidence and self-esteem, which Dacre Pool and Sewell [12] link to the development of employability. Dacre Pool and Sewell [12] and Loedermann and Scharrer [13] emphasise the importance of reflection and self-evaluation opportunities to the development of student career identity. Furthermore, career identity competency depends on local language skills and cultural understanding. Weak career identity may manifest itself in ineffective job application, as an individual may feel uncertain about which positions to pursue and how. The Employability Skills MOOC set out to assist the participants in clarifying their career direction by providing concepts to help their reflection and self-evaluation activities.

Job acquisition competency refers to job seekers' ability to gain an overview of internal and external labour market opportunities, select suitable positions, pursue them effectively and negotiate with employers to gain employment. Kapanen *et al.* [9] suggest that foreign graduates may not be aware of their possible weaknesses in this area, choosing to apply to positions where their chances of success are low or repeatedly sending ineffective applications due to unawareness of local job market conditions. Job application skills for Germany were therefore among the MOOC learning objectives.

Workplace adaptation competency determines how effectively graduates integrate to a workplace in particular and to the German workplace culture in general. The MOOC learning objective in this respect was to provide the participants tools for understanding and adapting to the German workplace. The aim is to enhance the person-organisation fit, which according to Cable and Judge [14] is an important indicator of new graduates' professionalism. In addition, adaptation depends on understanding one's competencies and ability to use them in the new workplace environment [2]. Finally, because the MOOC was intended for foreign graduates, the impact of intercultural differences on performance at work was included among the learning objectives (see [15]).

Finally, the development of the identified employability competencies depends on the individual psychological factors. Motivation and attitudes bring about a will to adapt to changing circumstances and spend effort on succeeding in one's career [16]. Dacre Pool and Sewell [12] emphasise three further psychological concepts – self-efficacy, self-confidence and self-esteem – as important factors of individual employability. Understanding central concepts in this area was included among the learning objectives. A summary of the learning objectives is provided in Table 2. The course design derived from these objectives is discussed in the following section.

Table 2. Summary of learning objectives in the Employability Skills MOOC

Competency area	Learning objectives
Language skills	• To gain a realistic picture of typical language requirements in German work life • To understand the potential advantages of knowing foreign languages in Germany
Career identity	• To gain an overview of the factors that may influence one's career choices • To learn ways to strengthen one's career identity • To understand the importance of reflection and evaluation to the development of career identity • To understand the importance of language and cultural competency on career identity

Job application	• To gain an overview of the various ways to identify job opportunities in Germany • To learn how to plan and manage one's job applications • To learn how to apply for jobs effectively in Germany
Workplace adaptation	• To gain tips for behaving at a new workplace in Germany • To learn methods for analysing various aspects of one's workplace • To learn about analysing one's competencies within the organisational context
Motivation and self-theory	• To learn about the nature and sources of motivation • To understand the importance of motivation on employability • To gain an overview of the psychological aspects of employability (self-construct)

2.2 Course design: Content, pedagogy, exercises and assessment

The content design of the Employability Skills MOOC was guided by two key criteria. The first key criterion was the appropriateness of the content for the audience. The intended primary audience was defined as foreign students and graduates of technical and commercial disciplines in Germany. However, it was mentioned that any interested learner is welcome to join the course. Therefore, on the one hand the content had to serve the specific needs of the primary audience; but on the other hand be non-exclusive and address an audience with heterogeneous circumstances and goals. Because a diverse audience could be expected, rather universal contents were preferred and a pragmatic approach chosen: The learned content should be readily applicable and adaptable to diverse circumstances. The second key criterion was the technical feasibility of content implementation on the iversity.org platform. This refers to both overcoming the platform's limitations and taking advantages of its particular strengths. For example, it was not possible to implement exercises requiring close guidance or personal interaction. Instead, exercises using automated feedback or exchange with peers using digital media could be implemented.

The MOOC contents were selected from a range of potentially important themes. With limited production time and resources, contents were prioritised according to the two above-mentioned criteria. Contents that were perceived the most important and feasible to realise were produced first. An overview of the chapters and learning units is given in Table 3.

Table 3. Overview of the MOOC chapters and units

Chapter	Learning unit
1 Introduction	1.1 Welcome 1.2 Schedule, themes and learning goals 1.3 The certificate track 1.4 Introduction to employability skills 1.5 Discussion and reflection
2 Career identity: Defining yourself on the labour market	2.1 Introduction 2.2 Career identity 2.3 Career strategy and lifelong learning 2.4 Career coherence homework (assignment) 2.5 Employer expectations of graduate identities 2.6 Self-presentation and networking
3 Job application skills	3.1 Introduction 3.2 Identifying and assessing job opportunities 3.3 Managing the job application process 3.4 Application documents overview 3.5 Writing the curriculum vitae (Lebenslauf) 3.6 Writing the cover letter (Bewerbungsschreiben) 3.7 Communicating with employers and preparing for job interviews 3.8 Career development project (exercise)
4 Workplace analysis	4.1 Introduction 4.2 Getting a good start in a new job 4.3 Analysing the workplace – "hard" elements 4.4 Analysing the workplace – "soft" elements 4.5 Analysing your competencies 4.6 Understanding intercultural differences
5 Psychology of employability	5.1 Introduction 5.2 Construction of employability – the CareerEDGE model

	5.3 Employability and the self-concept
	5.4 The impact of attitudes on employability
	5.5 Motivation and employability
6 Project assignment	The learning project of the course, required to complete the Certificate of Accomplishment.

Due to its modular structure, the Employability Skills MOOC is extensible. Initial plans for further expansion were made already during the initial course production. Potential areas were derived from employability literature and included (see [17] for summary):

- Basic transferable skills: literacy, writing, numeracy, verbal presentation, basic ICT skills
- Problem-solving, analytical skills and creativity skills
- Work process, task and time management skills
- Team work skills; interpersonal and communication skills
- Commercial awareness and business acumen

In addition, the Employability Skills MOOC does not exist in isolation. One of the key strengths of the MOOC format is the ability to link to external resources. Many of the above topics are taught in other MOOCs, learning videos and other web resources. It is also possible to weave external resources to the MOOC learning experience providing learners guidance and opportunities to reflect. Not all topics, however, can be taught effectively without face-to-face contact. In a flipped classroom mode, a university instructor may build a blended learning employability skills course that combines the MOOC with on-campus lessons and exercises. A materials package for a flipped classroom workshop is currently under development by the MOOC author.

Bischof and von Stuckrad [18] suggest eight dimensions of MOOC design that are used in the following to describe the Employability Skills MOOC:

- *Interaction between learners and teachers.* The MOOC was designed to offer diverse possibilities for learners to interact with the course teacher. The learning unit content was delivered using subtitled videos and text content. The slides used in the videos were provided as PDF downloads in each unit. In addition to the discussion forum where questions to the instructors could be posted, a course email address was established for private inquiries.
- *Interaction among the learners.* Although the xMOOC is a teacher-led format, learner interaction plays an important role in reflecting and evaluating that what was learned. The main media for open interaction were the discussion forum and the LinkedIn group established for the course.
- *Types of learner feedback provided.* In the MOOC, both automated and manual learner feedback was provided. For automated feedback, each video unit was followed by a quiz for self-control of learning results. Manual feedback was provided by both the teacher and peers. The main instrument for teacher feedback was the commenting function in assignments. In peer assignments, random peers were prompted to provide feedback on a learner's submission.
- *Degree of automation.* In addition to automated feedback using unit quizzes, automation supported course management in matching the givers and receivers of feedback,
- *Degree of openness of participation.* The course was open for anyone with an internet connection and an email address. A simple registration sufficed to access all content.
- *Certification opportunities.* Two types of certification were achievable in the MOOC. The first type is the Statement of Participation, a free, automatically created document issued to learners completing at least 80 percent of the learning units. The second type is the Certificate of Accomplishment, given to learners who completed the course's learning project, participated a review meeting with the teacher and paid an examination fee.
- *Licensing of the content.* No particular licensing was applied to the content. The copyright of the content remains with the authors.
- *Fixed or flexible start and finish dates.* The initial version of the MOOC had fixed start and end dates. However, the next version of the MOOC will use flexible start and end dates with fixed assignment submission deadlines.

The course assignments aimed at enhancing learning outcomes and providing the learners with self and peer reflection opportunities on various aspects of their careers. While topics for open discussion were provided in most units, the course contained eight assignments that allowed the teacher and peers to give feedback on submitted responses. The assignments covered the following areas:

- Formulating and reflecting on career plans
- Sharing experiences about what employers expect of graduates
- Practices for self-presentation and networking on the job market

- Sharing experiences of job applications and interviews
- Giving advice on getting started in a new job in Germany
- Comparing the implications of national cultures on work life
- Assessing work-related attitudes
- Identifying and analysing sources of work and career motivation

The MOOC included two types of assessment. First, automatically administered quizzes were to be passed by everyone in order to complete the learning units and earn the Statement of Participation by completing at least 80 percent of the units. Second, those learners who chose to pursue the Certificate of Accomplishment had to complete a project assignment as the key assessment instrument. The submitted assignments were assessed by the teacher, after which a one-hour online meeting was scheduled with each examinee to discuss the assignment. The topic of the project assignment was self-development by reflecting on the four course areas: career identity, job acquisition, workplace integration and psychology of employability.

This and the previous section provided an overview of the Employability Skills MOOC concept, learning goals and course design. The following section evaluates the course design from the learner perspective using the demographics and motivation surveys conducted prior to the course start.

2.3 Learner perceptions on the MOOC design

Prior to the course launch, three surveys were conducted to investigate the learners' profiles, motivation and preparedness to take the course. Two were standard iversity surveys addressing motivation (Survey 1; n=156) and demographics (Survey 2; n=226). The third one was a custom survey (Survey 3; n=207) posing further course-specific questions about learner motivation and demographics. An overview of the survey questions is presented in Table 4. The key findings from these surveys are discussed in the following. It is noted that the responses may not be representative of all registered learners as there was no random selection.

Respondents to Survey 1 demonstrated an overall high motivation toward the course. On average, they intended to spend 4.9 hours per week on course activities. 89 percent intended to view *all* or *most* learning videos and 73 percent to complete all or most assignments. These figures appear to be in strong contrast to the participation outcomes: Less than 10 percent of learners completed the mandatory contents and exercises to pass all or most learning units. A similar trend could be seen in intentions to participate social activities in the course. Over 70 percent of the respondents intended to participate discussions and exercises, and 45 percent peer-graded assignments but less than 10 percent of learners participated these activities during the course. The rate of active participation also fell during the course regardless of regular email announcements, prompts and timely feedback.

Table 4. An overview of Employability Skills MOOC participant survey questions.

Survey 1: Motivation survey (iversity) n=156	• Intended number of hours spent on the course • Intended percentage of learning videos watched • Intended percentage of assignments completed • Intention to participate in social activities • Reasons for registering onto the course • Intended use of the course: professional, academic, personal • Prior familiarity and experience with the course topic
Survey 2: Demographics survey (iversity) n=226	• Gender, year of birth • Country of origin and country of residence • Highest level and subject area of education • Employment or study status and area • Language skills
Survey 3: Custom background survey (author) n=207	• If non-German, years lived in Germany • Job-seeking intentions • Level of confidence in own career skills and progress • If non-German, level of confidence in integrating to German work life

The MOOC was primarily designed for foreign students and graduates of technical and commercial disciplines in Germany. Survey 2 indicates that a significant number of learners in this target group were reached. Of the respondents, 43 percent reported speaking German although only 6 percent were born in Germany, indicating an audience of foreign persons with connection to Germany. In

addition, 77 percent of the respondents possessed at least a Bachelor's degree. 46 percent of the respondents were currently enrolled as a student and 43 percent were engaged in job search; 30 percent were working full-time. Of the respondents, 80 percent were active in a technical or commercial discipline.

Survey 1 indicated that for most learners, professional development was the main motivation to take the course. For 71 percent of the respondents, help in finding a new job and for 38 percent learning useful skill for current employment were *very* or *extremely important* (responses 4 and 5 on a 1-5 scale) reasons for joining the course. General interest and curiosity were *very* or *extremely important* reasons to join for 53 percent of the respondents. Surprisingly, only 26 percent of the respondents (i.e. 56 percent of those currently studying) found support for current studies a *very* or *extremely important* reason for joining. The least popular reasons to join were having friends taking the same course (*not important at all* for 73 percent of respondents); and wanting to take a course from this particular instructor (*not important at all* for 42 percent of respondents).

Survey 3 inquired the respondents' confidence in their pre-existing skills in each of the four thematic areas of the course: career identity, job application skills, workplace integration and psychological aspects of employability. The scale used was from 1 (not confident at all) to 5 (extremely confident). The findings are summarised in the following:

- *Career identity.* The respondents' career confidence was relatively high. 60 percent of the respondents were *very confident* (4) or *extremely confident* (5), with an average of 3.6 among all participants. There were only minor differences between native Germans and migrants. However, in the free comments several non-European learners wished a stronger focus on the basics of the German labour market including economic and cultural aspects.
- *Job application skills.* The respondents were significantly less confident in in their job application skills than in their career identity (average 2.8). In this area, differences between native Germans (average 3.7) and those born elsewhere (average 2.6) were significant, which indicates that job application skills should be emphasised in international degree programmes. Furthermore, the differences in job application practices between countries were not fully known the respondents: Foreign-born respondents living in Germany evaluated their skills as weaker (average 2.4) than foreign-born respondents not living in Germany (average 2.9).
- *Workplace integration.* The respondents' overall evaluation of their ability to integrate to a German workplace was reasonably strong (average 3.4). The difference between European (average 3.7) and non-European (3.2) respondents suggests that cultural proximity plays a role. Several non-European learners wished in course discussions more basic information about the German workplace culture in addition to the provided workplace analysis tools.
- *Psychological aspects of employability.* With an average of 3.6, the respondents had strong confidence in their understanding of psychological aspects. 55 percent of all responses were *very confident* or *extremely confident*. The respondents' backgrounds had a negligible impact.

The above data intended to guide the MOOC design and do not allow an assessment of learning outcomes in the MOOC. Similar to the interview findings of Kapanen *et al.* [9], the surveys imply a need to focus on pragmatic career skills and basic labour market understanding. However, the above surveys also revealed a significant number of learners with high levels of confidence in their prior knowledge in the course areas. Using the modular structure of the MOOC, both basic and advanced units can be included in order to serve these diverse learners' needs. Overall, the findings also indicate relatively small differences between German, European and non-European respondents. Therefore, there may not be strong need to profile the course toward a particular group of learners but instead emphasise its generic, modular structure and customisability by the learner.

Section 2 discussed the Employability Skills MOOC concept, learning goals and design, as well as the registered learners' perceptions of the course content. The next session discusses the project that was completed in order to realise the Employability Skills MOOC.

3   PRODUCING, PROMOTING AND CONDUCTING THE MOOC

The realising the MOOC involved several types of activities: designing and producing the content; and promoting and conducting the MOOC. In order to describe the requirements involved in realising a MOOC, this section gives an overview of the resources and workload involved. A summary is provided in Table 4, followed by a discussion.

Table 5. Summary of the MOOC project resources

Human Resources	• Main author: about 350 hours of working time • Contributions from two further authors • Student assistant – video, audio and general: 80 hours • Student assistant – post-production and promotion: 80 hours
Technical resources	• Two HD cameras, two microphones, audio recorder • One laptop, two hard discs (1 TB each) and one USB memory (64 GB) • iMac post-production workstations and Camtasia Studio for laptops
Spaces	• Regular rooms for recording videos • Post-production lab
Budget	• Only existing resources were used; thus no budget was created.

Developing and producing the MOOC was the most resource-intensive set of activities in the project. Seventy percent of the 350 hours of main author time and ninety percent of the 160 hours of student assistant time were used in content creation, rehearsal, recording and post-production. The content was designed on a PC using regular office software; the speech was scripted and visual content was integrated to the script. In order to reduce recording time and the number of necessary takes on each unit, the main author spent significant time rehearsing the script. Nevertheless, between one and five takes per video unit were required, depending on its length and complexity. Recording was undertaken in sessions of 3-4 hours each; this duration was enough for preparing the space, recording typically 1-2 video units, organising the files on two storage media and cleaning up. As soon as possible after the recording, the markers for inserting video content were added by the main author and the content was delivered to post-production. After a final check, the content was uploaded onto the iversity.org platform, provided with quizzes and other materials and approved for publication.

The promotion of the Employability Skills MOOC began in May 2015 with the production of a video trailer that was uploaded on YouTube. Subsequently, course ads with links to the trailer and a course registration page were posted on the web. The ads were posted on social media and requested to be published on several blogs and websites. Institutions like the DAAD and the German Employment Agency were asked to disseminate the information as the course learning objectives strongly align with their aims. In addition, the MOOC was integrated to the advertising efforts of the host degree programme, the Master of Business Administration & Engineering at the HTW Berlin. Using these means, about 4,400 registered learners were acquired by the time the course was being conducted.

Of these participants, about 400 were active learners (i.e. completed most units). It is possible that a large proportion of the learners were interested in the topic but not sufficiently motivated to complete chapters due to the topic being of no immediate relevance to them. However, even the over 90 percent attrition rate should not be interpreted as a symptom of an ineffective medium or design. A benefit of the MOOC format is that learners quitting the course due to whatever reasons do not occupy one of limited seats. While a MOOC can scale up almost limitlessly, the 400 active learners (typical campus group size for a comparable workshop has been between 20 and 40) formed a group of peers that provided mutual learning support and made the MOOC production a meaningful effort.

The MOOC launched on 3rd August and finished on 20th of September 2015. The course content remained available to existing and newly registered learners until February 2016. The course facilitation efforts focused between the official start and finish dates. During this period, most work consisted of reviewing assignment responses, participating and moderating discussions, responding to learner inquiries and keeping the course 'alive' by posting interesting web content for discussion. At the end of the course, a further task was to support and assess the learning projects submitted by learners who opted for the Certificate of Achievement.

Overall, the Employability Skills MOOC project followed the project plan to a high detail. Some changes to the planned recording and post-production dates were made during the project but these changes did not delay the completion of the course. Because the production schedule had very limited buffer, it was important to develop a detailed resource plan in order to facilitate fluent workflows, ensuring the availability of recording spaces, equipment, students assistant and the post-production lab at the right times. Thus, bottlenecks at all stages of the project could be mostly avoided.

The major challenges in the MOOC project were also related to development and production. In content development, the key challenges were to choose contents suitable for teaching to a diverse and unforeseeable audience using the MOOC format. In each of the areas identified in Table 3, much more potential content exists than was possible to include in the MOOC and therefore effective

prioritisation was necessary. In addition, as Guardia *et al.* [19] emphasise, it is pedagogically important to create 'teacher presence' throughout the course, referring to comprehensive learning facilitation using the variety of media available. With the necessity to do this known from the project start, the contents were chosen to allow for effective facilitation and integration to further internal and external content, aiming at enhancing pedagogic coherence of the MOOC.

4   CONCLUSIONS AND FURTHER WORK

This paper has introduced several aspects of the Employability Skills MOOC. An overview of the course was given in the first section. The second section discussed the MOOC concept, design and learners' perceptions on both. The third section discussed the project that was conducted to create the Employability Skills MOOC. This final section presents concluding remarks on three areas of the MOOC project – course design, marketing and facilitation – and summarises further work.

The learner surveys, as well as the experiences in creating content for the MOOC medium, point at the benefits of developing a clearly outlined modular structure for the content. Pedagogically, a modular structure is a prerequisite for managing and assessing learning. In addition, including learning units on different levels of challenge helps address the learning needs of a diverse audience typical to the xMOOC format. A further observation from the course facilitation was that assignments that are rather small, clearly formulated and interactive succeed the best. While automated tasks like quizzes can provide instant learning feedback with limited effort, discussion exercises and reflection assignments can help enhance teacher presence and interaction between the learners.

Many channels for marketing the course were available for little or no monetary cost on the internet, in particular on social media. Because the MOOC functionality allows sending email messages to registered learners, it is beneficial to begin advertising the course as early as possible. In addition, because significant effort is needed to look for promotion opportunities on the web, beginning early will help distribute the workload over a longer period. Especially social media groups, but also the media offerings of organisations like agencies or companies, allow targeting the promotion efforts toward a certain audience. However, the learner surveys revealed that for relatively general interest MOOCs like the Employability Skills MOOC, it may be more important than targeting to reach a large number of potential learners by posting course ads on social media, popular blogs and email newsletters. While only a small proportion of registered participants can be expected to become active learners, even limited promotion efforts can help reach hundreds of active learners.

In course facilitation, the key challenge is to create teacher presence and connect to the learners in a way that supports learning motivation and outcomes. Especially early when participation is active, it is important to be able to provide timely feedback on assignments and answers to forum questions. It is also important to address learner issues, such as low-quality peer feedback, timely in order to maintain the motivation of those students willing to spend effort. During the course, maintaining learner motivation and commitment on individual and group levels was singled out as the most important aspect of facilitation. Over the MOOC medium, interaction needed to be timely, regular, inclusive and empathic in order to be successful.

The Employability Skills MOOC is due for re-launch in June 2016. The course will remain online indefinitely and, as mentioned in section 2.2, fixed time frames will exist only for assignments. Some content has been re-recorded in order to improve audio quality. Basic information about the German labour market and workplace have been added in order to address a need revealed in the surveys and learner feedback. In addition, the MOOC assignments will be redesigned. The new assignments are smaller, more interactive and more numerous. In addition, a Learning Journal – a learning record created by each learner and commented by the facilitator – has been added for improved reflection and evaluation. Another function of the journal is to allow new learner assessment opportunities, enabling further studies on the potential career impact of participating the Employability Skills MOOC.

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