DIGITAL SOLUTIONS FOR ALTERNATIVE ROUTES INTO HIGHER
EDUCATION – POSSIBILITIES AND CHALLENGES OF DIGITAL
TEACHING AND LEARNING SCENARIOS FOR REFUGEES: FIRST
RESULTS FROM THE INTEGRAL² PROJECT

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Abstract

Kiron Open Higher Education (Kiron) is a Germany-based non-profit edtech organization promoting
the use of digital solutions in higher education to enable free access to higher education and
successful learning for refugees worldwide. In order to overcome the barriers refugees face, they can
start studying with Kiron by participating in a digital study program based on Massive Open Online
Courses (MOOCs) with the ultimate aim to transfer to a regular offline study program at one of Kiron’s
partner universities with Kiron credits recognized. In order to further refine and test its innovative
educational approaches, Kiron launched the pilot research & development project INTEGRAL² in
cooperation with two prototypical German higher education institutions, RWTH Aachen University and
Lübeck University of Applied Sciences in September 2016. This paper provides an overview of key
pillars as well as first results from the project with a focus on MOOC-based online curricula in the
Kiron study programs and approaches to increase course completion rates.

Keywords: INTEGRAL², MOOCs, completion rates, higher education, digitization.

1 DIGITAL SOLUTIONS FOR GLOBAL EDUCATIONAL CHALLENGES

The global higher education landscape is changing rapidly. Digitization and internationalization are key
drivers of this process and will become increasingly important to education worldwide. Moreover,
integrating refugees into higher education systems has emerged as a new challenge. Kiron, a non-
profit edtech organization founded in 2015, promotes the use of digital solutions in higher education to
enable access to higher education and successful learning for refugees worldwide. In order to
overcome the barriers refugees face, they can start studying with Kiron regardless of their asylum
status, mobility restrictions, their knowledge of the language in their host country or high tuition fees of
universities by participating in a free online study program ([1],[2]). After providing a document that
proves a refugee or asylum seeker status, they can register and start their studies on Kiron’s learning
platform Kiron Campus. Students enrol in one of five study tracks or benefit from preparatory courses
to refresh their basic skills, and receive support through a range of additional services. The ultimate
aim is a potential transfer to a regular offline study program at one of Kiron’s partner universities with
Kiron credits recognized.

In order to further refine and test its innovative educational approaches, Kiron launched the pilot
research & development project INTEGRAL², which in German is short for “Integration and
Participation of Refugees in the Context of Digital Teaching and Learning Scenarios”, in cooperation
with two prototypical German higher education institutions, RWTH Aachen University and Lübeck
University of Applied Sciences in September 2016. Overall, INTEGRAL² aims to promote the
integration of refugees into the higher education system and to identify potential courses of action –
both as regards opportunities for digital change and the internationalization of universities. As a result,
Kiron can serve as a blueprint for projects that target prospective students from abroad and provide an
important impetus for making higher education more accessible to the educationally disadvantaged. In
order to reach this goal, Kiron is exploring the possibilities and challenges of digital solutions for
alternative routes into higher education, especially as regards transferring from prior learning to
accredited study programs [3].

A key aspect of the INTEGRAL² project is to refine its educational approaches. To cater the needs of
students from very diverse backgrounds, Kiron offers an innovative educational model which
combines digital (synchronous-asynchronous) and traditional blending (online-offline) - Blended
Learning 2.0. In the following, we will introduce the model which has been enhanced within the
INTEGRAL² project and provide first results on how our educational approach affects study success measured by MOOC completion rates.

1.1 Kiron’s Academic Model

In order to enable access to higher education for refugees worldwide, Kiron offers a fully online study program. The first one or two years of online studies are based on a digital and fully modularized curriculum that clusters MOOCs created and provided primarily by external partners (Fig. 1). Leading universities such as MIT and RWTH Aachen develop the content and pedagogical framework of these MOOCs, while renowned MOOC providers like Coursera or edX provide them on their platforms. Kiron bundles these MOOCs into modules on its learning platform Kiron Campus based on their learning outcomes and independent of the MOOC provider. All Kiron curricula offered on Kiron Campus meet the standards of the European Higher Education Area [4] and thus provide a coherent educational program.

Within the INTEGRAL² project, these curricula have been refined and student guidance throughout the student journey has been emphasized. On our platform Kiron Campus, for instance, our students can not only find all the subject specific courses available to them, but also preparatory courses to learn or refresh any basic skills they may lack. Moreover, they automatically receive recommendations on the next course they should take in order to progress quickly with their studies. These improvements not only ensure that courses that require certain skills are taken in a consecutive order, but also that students take the recommended courses in a similar order and therefore stay within their virtual learning community.

Kiron negotiates learning agreements for the recognition of prior learning with partner universities, who can then award up to 60 credits for completed Kiron modules according to the standards of the European Credit Transfer and Accumulation System (ECTS) [5]. After about one or two years, students apply to Kiron’s partner universities, where they then complete their third and fourth year of studies to accumulate another approximately 120 ECTS credits. Kiron alumni then have the chance to earn a standard, accredited bachelor’s degree from these partner universities.

1.2 Live online collaboration

A major concern often raised about studying with MOOCs is that although thousands of students enroll for courses, only a very small proportion finally completes them. Such low course completion rates, typically ranging from 2 to 10 percent ([6], [7]), highlight the need for additional support in MOOCs or MOOC-based learning environments. Several studies emphasize the importance of regular communication and interaction [8], as providing feedback seems to be one of the most effective strategies to improve students’ motivation and success. Moreover, in a timely analysis of free digital learning (FDL) for inclusion of migrants and refugees, the authors conclude that “targeted’, ‘blended’

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**Table 1. Kiron Academic Model**

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>~2 years online studies at Kiron</td>
</tr>
<tr>
<td></td>
<td>Optional preparatory modules</td>
</tr>
<tr>
<td>Year 2</td>
<td>Specific modules for chosen study track</td>
</tr>
<tr>
<td></td>
<td>Application for transfer to a partner university &amp; recognition of up to 60 ECTS</td>
</tr>
<tr>
<td>Year 3</td>
<td>~2 years of on-campus studies</td>
</tr>
<tr>
<td></td>
<td>Regular enrolment for the remaining semesters leading up to an accredited bachelor's degree at a partner university</td>
</tr>
<tr>
<td>Year 4</td>
<td>Study Tracks at Kiron</td>
</tr>
<tr>
<td></td>
<td>Orientation &amp; Preparation</td>
</tr>
<tr>
<td></td>
<td>Business &amp; Economics</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
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<tr>
<td></td>
<td>Social Work</td>
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<tr>
<td></td>
<td>Political Science</td>
</tr>
</tbody>
</table>

*Figure 1. Kiron Academic Model.*
and 'facilitated' approaches are optimal; they are unanimously seen as a means of enhancing the success rate of any FDL initiative, particularly for formal learning." [9].

Based on pre-defined learning outcomes, the scalable, mostly self-paced MOOCs are therefore complemented with synchronous online tutorials offered by Kiron Direct Academics as well as synchronous study groups.

The Direct Academics program enriches the online courses through more personalized live tutoring for smaller student groups. Volunteer lecturers from universities and academic institutions support Kiron students through interactive study formats which currently take place in Google Classroom and Google Hangouts. The Kiron Direct Academics Program thereby supports the students in reaching the intended learning outcomes and strengthens student-instructor interaction.

Of particular importance are also the peer-to-peer study groups, where students can team up to support each other in course-specific issues. Study groups not only have the aim to encourage interaction between students, but also enable effective peer support as more experienced Kiron students volunteer to take on the role of study group organizers also functioning as moderators or facilitators. As part of the INTEGRAL² project, the Lübeck University of Applied Sciences produced a course that introduces the study group organizers to effective methods to organize and facilitate study groups and to communication methods fostering successful peer-to-peer support.

Several studies show that also offline interactions, when organized well, tend to foster a sense of community, encourage submission of coursework, and significantly increase course completion rates [10]. Moreover, students taking MOOCs find offline working groups more beneficial than online discussion groups [11]. As most comparative studies indicate that course completion rates are significantly higher in blended settings, we are also testing the potential of offline tutorials. In a first trial, offline study weekends were designed to prepare students for final exams in two MOOCs. For both exams, qualified tutors from Kiron’s volunteer pool were organized to work with the almost 50 refugee students from all over Germany who attended. The study sessions were accompanied by personalized consulting and study group sessions with peer-to-peer learning methods.

1.3 Personalized online support services

"The importance of mentorship and support should not be underestimated, as some learners are unfamiliar with digital learning and with the cultural learning environment in which they find themselves. This is true both for those with a higher education background and digital literacy (in formal learning) and also for those who lack such a background and are more interested in language learning and civic integration related learning." [9]

In order to support the students during their Kiron studies and strengthen their skills, the course curriculum is embedded in an ecosystem of support services which are offered to provide students with a more personalized study experience and equip them with the skills they need to later on transfer to a local partner university.

The Kiron Language School offers the students the opportunity to obtain the language skills needed in the host country to enroll at a partner university, but also additional (academic level) courses on the language used in most MOOCs, English. It offers a selection of online and offline courses led by professional teachers and qualified language institutions. Structured study mentoring programs support and empower the students in achieving their personal and academic goals with the involvement of students as well as corporate volunteers. The Kiron Counseling Service supports students who are dealing with personal challenges or stressful situations during their studies. The Kiron Help Desk provides answers to various program-specific questions, from admissions to technical support to questions regarding partner universities.

2 METHODOLOGY

As described above, Kiron aims to offer a learning environment that embeds the academic model in an ecosystem of live online collaboration and support services and thereby provides students with a more personalized study experience that should support and motivate them throughout their studies. The INTEGRAL² research team was able to have a closer look at quantitative data regarding the question how these approaches actually influence Kiron students’ study success.
On our platform Kiron Campus, students find all courses available to them and indicate when they enroll in or completed a specific course. However, to take a course, they are directed to the platforms of the specific MOOC providers like Coursera or edX.

Study success is generally measured by MOOC completion rates, which is calculated by dividing the number of students who finished a MOOC by the total number of students who have enrolled in the MOOC. We calculated completion rates both for all courses available on Kiron Campus, as well as for the preparatory courses.

As these analyses are based on self-reported MOOC completion rates, they have their limitations. To examine the validity of the self-reported MOOC completion rates, we therefore compared them with data received from one of the MOOC providers. For Kiron students who participated in the Coursera for Refugees-initiative provided by Coursera, we received daily updates on Kiron students' course enrollment and completion rates. To examine the validity of the self-reported data provided by our students on Kiron Campus, we therefore calculated the MOOC completion rates based on the data provided by Coursera and compared them to the self-reported data. Moreover, we also received completion rates for one of our introductory courses provided by edX.

3 RESULTS

3.1 Self-reported MOOC completion rates on Kiron Campus

Relative to the typically low MOOC completion rates of 2-10% [4, 5] by average MOOC providers, every fourth Kiron student who enrolled in a course on Kiron Campus indicated to have also completed the MOOC (24.8%). For preparatory courses, the completion rate was even higher, with almost every third student who enrolled in a preparatory course stating to have finished it (32.5%; left panel, Fig. 3).

![Figure 3. Left panel: Proportion of students who indicated to have completed specific MOOCs on Kiron Campus relative to the typical MOOC completion rates by average MOOC providers. Right panel: Comparison of self-reported data over all provided courses and recorded data provided by Coursera.](image)

3.2 Self-reported vs. recorded MOOC completion rates

Were self-reported completion rates comparable to completion rates received by Coursera? The right panel in Fig. 3 indicates that self-reported and recorded completion rates were indeed very similar (24.7% vs. 24.2%, z = 0.477, p = 0.63).

For some of the MOOCs provided in our curriculum, completion rates even exceed 40%. The typical activity pattern in MOOCs of average MOOC providers is that in the beginning of a course, activity is much higher than in the end, with drop-out rates of up to 95%. In on-campus courses, where most of the learners who start are intending to complete the course, activity is much more level. For Kiron courses, especially regarding the introductory courses suggested in our curriculum, the pattern looks more similar to the typical on-campus activity and completion rates, with a rather high percentage of students completing the MOOCs. For instance, for edX' *Introduction to Marketing* by the University of
British Columbia, recorded completion rates were 46.67% for 270 Kiron students who enrolled in the course between October 2016 and January 2017 (data received in January 2017).

4 DISCUSSION

The results described above indicate that MOOC completion rates reported by students on Kiron Campus are generally rather high. With completion rates of 25% over all provided courses, the pattern is more similar to the one of on-campus courses than to the completion rates of regular MOOC providers.

There are several factors that might contribute to this pattern. Kiron aims to offer a “targeted’, ‘blended’ and ‘facilitated’ approach” [9] which is considered optimal for enhancing the success rate of FDL initiatives. The learning environment on Kiron Campus with refined MOOC-based online curricula and specific suggestions for recommended next courses provides students with increased guidance. With the curricula being embedded in an ecosystem of live online collaboration offers such as Direct Academics or study groups, as well as the online support services, students are provided with a more personalized study experience that should support and motivate them throughout their studies. However, numbers of students taking part in support services such as online mentoring are still small and the actual benefit of each of these offers for study success has yet to be further investigated.

A further reason for these high numbers might be that Kiron students have the possibility to potentially transfer to a regular offline study program at one of Kiron’s partner universities with Kiron credits recognized. Formal recognition of accomplishment seems to be a major factor in motivating students to persist in completing the course requirements [8]. Moreover, especially for refugees seeking access to higher education recognition seems to be of major importance: “refugees who were specifically interested in higher education saw recognition of credits and degrees as important” [9].

Relative to all other courses provided on the platform, completion rates for preparatory courses are even higher. For regular MOOCs, insufficient background knowledge and skills to understand the course material can be an important cause of low completion rates ([8], [12]). For preparatory courses that explicitly target knowledge gaps, students might therefore have better chances to be able to complete the course. Whether participating in preparatory courses is also beneficial for subsequent study success on Kiron Campus has yet to be analyzed.

In general, self-reported data on MOOC completion rates on Kiron Campus seem to be relatively accurate. Note that to control course completion, for instance for students transferring to a partner university, Kiron checks whether course certificates for the completed courses exist.

5 CONCLUSION

In order to enable access to higher education for refugees worldwide, Kiron offers an online study program combining MOOC-based online learning in a non-formal learning environment with the potential transfer to a regular study program with Kiron credits recognized. To enhance its students’ study success and provide them with a more personalized study experience that aims to support and motivate them throughout their studies, Kiron’s curricula are embedded in an ecosystem of live online collaboration offers such as Direct Academics or study groups, as well as online support services. The analyses on study success reported in this paper indicate that Kiron students’ MOOC completion rates are generally rather high with some patterns in introductory MOOCs even looking more similar to the ones of on-campus courses than to the completion rates of regular MOOC providers. The actual benefit of each of the provided offers for study success has to be further investigated. Kiron’s general approach, however, seems to result in successful studying for a significant number of its students. In order to serve an even larger majority of its diverse student population in the future, Kiron will have to further refine its educational approaches to even better balance the aim of scalability with the need of personalization.

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REFERENCES


