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Onboarding, student retention and mobile technologies: Existing knowledge and best practices

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Introduction

In the EU, the number of Early School Leavers is ten percent among 18 to 24-year-olds in 2018 (Eurofound, 2013). Hidden behind this figure are complex, multifaceted, and different reasons depending on countries and educational systems. The project 'Onboarding and Student Retention' (O&SR) seeks to develop and create new methods based on mobile technology that onboard the students to the educational environment and to create a predicative retention approach. The O&SR-project is an Erasmus+ founded project, s carried out by six partners:

- Fønix (Norway), a provider of HR services and career guidance counseling for adults
- North East Scotland College (Scotland), a college which works with digital tools and education
- TAKK (Finland), an adult educational institution
- Manzavision (France), a digital product developer
- Center for Ungdomsforskning (CeFU) (Denmark), a research center located at Aalborg University that specializes in youth, youth culture and youth well-being
- VUC Storstrøm (Denmark), an adult educational institution.

The aim of the project is to reduce the student dropout rate by ten percent in each of the involved educational institutions by developing new mobile technology based methods of onboarding and retention.

This paper will present existing knowledge and best practices related to onboarding, student retention and the use of mobile technology related to this and draws on literary reviews as well as key points from qualitative interviews conducted with teachers and supervisors at the four educational partner institutions. Those are VUC Storstrøm (Denmark), Tampere Adult Education Centre (TAKK) (Finland), North East Scotland College (Scotland) and FØNIX (Norway). Two professionals from each partner institution participated in each interview. The focus of the interviews was to explore the professionals' experiences with onboarding and retention of students in general but specifically regarding their views on best practice.

Hence, the intention was to uncover both successful onboarding and retention practices as well as challenges associated with onboarding and retaining students. In the paper, we will present the key points of the professionals' experiences as well as existing knowledge in the field as outlined.

Onboarding

Onboarding is a concept traditionally associated with the study of working life. However, in relation to education, the concept hardly exists and one has to turn to working life studies in order to understand the concept. Onboarding research typically focus on processes of learning for new employees. The focus is on new employees' acquisition of values of the workplace, formal and informal norms and codes, and basic practices (Van Maanen & Schein, 1979; Chao et al., 1994; Antonacopoulou, 2006; Ards & van der Velde, 2001; Coleman & Kleiner, 2001; Cable & Parsons, 2001; Cooper-Thomas & Anderson, 2003; Davies & Kleiner, 2001; Fenwick & Rubenson, 2005; Saks & Ashforth, 1997; Wanous, 1992). Many studies aim at understanding onboarding processes for newcomers entering an existing organization with the associated existing practices, rules and routines, where one gradually learns new competencies and practices to be able to perform adequately in this new community of practice (Wenger, 2009). The preoccupation with onboarding processes in studies of working life and organizational learning relates to a fundamental assumption that successful onboarding processes are crucial to the success and competitiveness of organizations and companies. Therefore, it has also been and continues to be a central focus point. However, organizations and companies seem to handle the onboarding process in different ways. For example through formal training exercises and programs, information sessions, onboarding courses and through participation in the organizations' daily practices (Sprogøe & Rohde, 2009). The inspiration from onboarding studies suggests that it is important for educational institutions to offer new students onboarding activities like information sessions or formalized exercises in which they train fundamental practices in education.

As mentioned, the concept of onboarding is not to be found in educational research but is addressed by concepts of 'transitions' and 'transition processes' (Pless & Katznelson, 2007; Görlich, 2016; Furlong, 2015; Wyn & Dwyer, 2000; Brunila & Lundahl, 2020) which seem to share similarities with the concept of onboarding. The aim is to create flexible and positive processes for students when they enter an unfamiliar educational institution. However, there are also significant differences between an educational institution and an employer. In education, the main purpose is learning and hence personal development, whereas the purpose for an employer is to generate capital. Hence, the employer depends on the employees' ability to carry out a job, which encourage an interest in investing in the onboarding process. Educational institutions

might have the intension to do so, but the quantity of newcomers entering at the same time also challenge this intension.

Trust, information and building relations

The onboarding process is present in the interviews with the professionals. Across the four interviews with the participating partner institutions, the professionals highlight the importance of teachers and other professionals (e.g. tutors) quickly building relations of trust, confidence and respect with the new students. They mention this as crucial for successful onboarding processes.

The four institutions seem to carry out the onboarding processes in various ways. In one instance, the school offers students a personal session with a supervisor before starting their studies. In this session, the student might address possible educational needs, and the student and supervisor clarify mutual expectations. In other instances, the supervisor is physically present in common area, which makes them more accessible by students. Other schools offer information meetings, assign a personal mentor, offer role models as well as various social relationship-building events.

Generally, the schools focus explicitly on making students feel comfortable by introducing routines and services at the institution. Common to these initiatives is to prevent the students from experiencing themselves as part of a system, which might be alienating. Instead, the teachers and mentors meet the students with trust. The professionals are highly aware of the importance of relationship building. They want the students to feel that the teachers and mentors understand and are curious about them and their educational wishes, needs and challenges at the beginning of their course.

As the teachers have daily contact with the students, the professionals highlight the teachers as crucial in relation to building trust in the beginning of the course. One of the institutions has successfully developed short video intros of the teachers. These are available to the students before starting the course, which enables the students to identify whom to search for on the first day. Furthermore, the interviews mentions the collaboration between teachers and counselors as a crucial aspect, because the collaboration involves the sharing of experiences and worries about at risk students. The students experiences this as a way of acknowledging each individual regarding their needs and challenges.

Onboarding challenges

However, the professionals also mention a few challenges. Firstly, the students generally constitute a very heterogeneous group with many different educational wishes and needs, as well as different previous educational experiences that may influence the students' meeting with a new educational institution and

their approach to learning. This makes the building of a trusting relation to each individual even more important and therefore, it is crucial to prioritize time and resources to this in order to achieve successful onboarding processes - especially in relation to vulnerable students.

Secondly, the professionals find large classes another challenge. This is to some extent related to the first. As mentioned, this is one of the key differences between onboarding at the labour market and in educational settings. When large groups of students start at the same time, *it is difficult to cover them all*, as one of the professionals put it. It is difficult to attend to everybody and all the different needs of the students. Especially the more quiet students go unnoticed and the teachers have a special task of 'uncovering' the needs of the 'invisible' students who may be at risk of dropping out without calling any attention to themselves.

Onboarding and the mobile app

In relation to onboarding processes, several of the professionals in the interview mention that an app function might have potentials. For example, a direct and easy way to communicate with teachers and counselors at the beginning of the study period might support the building of trusting relations. Another example is to provide information about students' mental health in general and highlight challenges and successes in the start of the study process. An app might also function as an information hub making it easier for new students to find services, events, locations and other practicalities at the institution in the beginning.

Retention, dropout and motivation

Understanding retention in upper secondary school is a complex matter. In order to understand retention and best practice, it is necessary firstly to understand the mechanisms of dropout. In the international literature regarding dropout and completion of education, several theories develop prescriptive models of factors influencing the outcome of educational activities (Lamb, 2011; Rumberger & Rotermund, 2012). Essential to this way of looking at retention and dropout is to analyze those as closely interwoven with structural, social and political conditions of society (Rumberger, 2011; Markussen & Sandberg, 2011). Hence, the research literature regards dropout as a process rather than as a sudden event (Rumberger, 1987; Rumberger, 2011; Nielsen et al., 2013; Lamb, 2011). Students' decision to interrupt education is not a sudden and spontaneous decision but one made over a longer period with a variety of events involved. Therefore, the research focus has shifted from examining factors related to the individual's personal and social background as variables to explain dropout rates towards an increasing focus on contextual dimensions preceding individual factors as well as socio-economic risk factors in relation to dropout

(Nielsen, 2011). A review of empirical research in dropout (Lamb, 2011) summarizes four main dimensions involved. 1) Individual background conditions such as gender, health, age and ethnicity, 2) institutional context as family, social network, local area and educational institutions, 3) individual dispositions like performance, motivation and attitude to education and work and 4) outcome, i.e. the individual's choice to continue or interrupt education (Lamb, 2011, 374f).

A review of conceptual models of dropping out and of the empirical research literature (Rumberger & Rotermund, 2012) highlights that no single factor can account for a student's decision to continue in school or dropping out. Individuals report a variety of reasons for dropping out, and similarly the research literature identifies a number of factors that appear to influence the decision. As dropping out is a process rather than an event, for many students, the process begins in early stages of primary school. When they enter upper secondary school, a history of negative school experiences will affect their prospects of retention. Furthermore, contexts are important to take into account. The research literature identify a number of factors within families, schools, and communities that affect whether students are likely to drop out or complete from upper secondary education, including economic and material resources as well as social resources and supportive relationships in families, schools, and communities.

In the EU, retention and dropout is conceptualized as 'Early school leaving' (ESL) and is perceived as a multi-faceted and complex problem caused by a cumulative process of disengagement. In 2010, EU formulated the aim of reducing early school leavers to less than ten percent by 2020. Hence, dropout and retention have been major political focus areas for a decade. A report from Eurofound (2013) describe dropout as the outcome of personal, social, economic, education or family-related circumstances. The report is the result of experts nominated by 31 European countries who point at a number of intervention measures in order to reduce ESL:

- Early Warning Systems: Methods and routines aimed at identifying and responding to early signs of ESL. The intention is to provide timely and targeted support for pupils at risk of ESL.
- Systemic support frameworks within schools: A support framework within the school based on a strong multi-professional approach and teamwork to ensure that students at risk receive the support they need in a timely manner.
- Focus on the needs of the individual pupil: Individual learning support, flexible learning pathways, high quality teaching, and learning based on student-focused methods should be a substantial part of school policies aimed at reducing ESL.

- Extra-curricular and out-of-school activities to enrich the learning offer: Many young people at risk of ESL lack a sense of identity or connection with the school. Extra-curricular activities provide opportunities for young people to develop such a sense of belonging. Extra-curricular and out-of-school activities should be compatible with educational aims to avoid potential disconnection between school and out-of-school life experiences.
- Support to teachers: Developing the capacity of school staff to create and maintain learning environments that support at-risk pupils is of crucial importance to reducing ESL (Eurofound 2013, 21-22).

Hence, the initiatives mirror the complexity in the dropout processes. In preventing dropout, it is important to implement measures that address the needs of the students' academic and social inclusion but also measures that address support frameworks for students as well as teachers and a warning system that makes students at risk visible.

In a Danish research project, the researchers focus specifically on the interplay between the students' prerequisites, the teacher's social pedagogical competencies, the learning environment, and the educational culture at the institution (Wahlgren & Mariager-Anderson, 2015). This approach relies on a literature review and point to the following points of importance in relation to retention: The teachers 'social pedagogical' competences, development of a learning environment based on social responsibility, focus on the individual student's prerequisites and study process and development of incentives at the institution to support the teachers' focus on retention. Furthermore, a recent research project on dropout (Mariager-Anderson et al., 2020) investigates the importance of students' goal orientation for their desire to complete their education. The project finds that following factors strengthen students' goal orientation: 1) Relevance of the education, including assessment of the relevance of the subjects. 2) Recognition and feedback in relation to achieving the goal as well as a more general positive feedback 3) The social environment, including the ability to reflect oneself in the group, as well as individual meetings with a supervisor/teacher 4) Personality and student self-efficacy (Ibid, 11-12).

Sense of belonging and sense of meaning is another focal point of interest in regards to students' motivation and dropout processes. In recent years, a performance culture with focus on utility, results, tests and grades has been dominating in relation to education. This is also visible in the yearly PISA assessments and the increased benchmarking of countries and schools on key performance educational indicators (Biesta, 2010; Louw & Katznelson, 2018). To some extent, this has changed the learning culture and educational aims. Today, getting good grades is more important than in-depth learning and cultivating

professional curiosity and interests. Hence, this raise the question whether we measure what we value, or value what we measure. Recent years' educational research indicate that educations and students – and especially vulnerable students - are generally challenged when it comes to developing a sense of meaning and purpose, because meaning and purpose to some extent are lost behind measurements, tests, and grades.

Motivation, meaning and practice-based learning

As outlined, retention, dropout and motivation are concepts inextricably linked and in order to prevent dropout and increase retention, it is important to understand, how educational motivation or lack of motivation develop over time. As mentioned, successful onboarding processes involve trust, information and building of relations. This also apply in relation to retention and educational motivation during the enrollment of the course. As one of the professionals puts it: *once the relationship is in place, it all works*. Thus, trust and relations constitute an overall point of attention.

Another point of attention mentioned in the interviews with the teachers and supervisors from the four partner institutions, is the theme of meaning and sense making. This involves the students' reflections on the purpose and their personal goal of attending the particular course. On an institutional level, this is a point of awareness and some of the schools work specifically on creating a sense of meaning and purpose for the students, for example by helping students to clarify what makes sense to them and why. Thus, the need to create a reflective space among students about meaning and the identity as a student seems to be more and more prevalent, and it also point towards the student' future. Questions that address the issue of who the students are becoming open up for reflections on how to create a coherent (study) narrative in relation to the past (what do I bring to the setting), the present (what am I doing now) and the future (where does this take me). This strengthens the students' sense of meaning of current educational activities, which, as highlighted in the literature outlined above, is pivotal to the students' retention and motivation.

Furthermore, such student reflections and activities depend on trusting relations, as mentioned previously. Several of the professionals also mention the physical settings in the form of cozy, open and informal rooms as well as plenty of time with important professionals as crucial in this regard. Several of the interview participants mention the view on student resources as a focal point. Instead of focusing on the students' shortcomings, it is important to focus from a resource point of view and bring forward the successes and resources of the students rather than mistakes and shortcomings.

Thus, in a retention perspective it seems crucial that students achieve a sense of having the competencies to act meaningfully in their own lives and in the particular educational setting. The students' motivation increases when they experience having the skills to be able to handle the challenges they face and the opportunity to express and unfold themselves and their talents. Conversely, if the students are not given these opportunities and do not feel competent or able to acquire the competencies relevant in a given education or course, motivation decreases, with dropout as an imminent risk. This understanding of competence relate to Bandura's concept of self-efficacy that supports the notion of coherence between meaning, identity and reflection (Bandura, 1982; 1997; Mariager-Anderson et al., 2020).

A final key issue specifically mentioned in relation to retention and motivation has to do with the teaching and the educational content. Several of the professionals mention that practice-related teaching motivate many students. Research in vocational education indicates that the practice-related aspect of vocational education is a central point of motivation for many young people's choice of vocational education (EVA, 2019). Among other things, this involves hands-on working rather than abstract models and symbols. According to the professionals, the same form of motivation seems to apply to many of the students in this project. Hence, working with the meaning content of the educational activities also in relation to practice-based learning seems to constitute a central motivating factor to the students in this target group.

Mobile technologies and student retention

The increasing development of mobile technologies allows technologies to interconnect and communicate with each other in new ways. Studies in a great variety of fields like education, learning, psychiatry, health studies and youth at risk illustrate how teachers, researchers, psychiatrists etc. use mobile technologies in very different ways and with different purposes.

In educational studies, research show how teachers use mobile applications as learning tools with the potential to enable greater levels of engagement among students (Wankel & Blessinger, 2013). The purpose in those studies is to show how the implementation of m-learning (Hwang & Tsai, 2011) have the ability to develop and strengthen the learning and engagement in learning for students. However, the researchers also highlight, that the technologies alone are not sufficient to engage and retain learners. As with any teaching and learning technology or approach, one need to use these technologies in a purposeful and meaningful way and to be integrated within a relevant theoretical framework that is appropriate to the teaching and learning context (Wankel & Blessinger, 2013, 5).

A research report from a European project “eFuture” (Rutkauskiene, 2012) identifies current trends and preferences of teachers and students in various countries in Europe regarding the use of mobile learning in teaching and learning. The project aims to develop new methods for the use of ICTs, Web 2.0 and mobile learning in education to support youth at risk in entering education and employment. The report points towards following advantages of using mobile technologies: 1) Enable curricular based learning activities, for example, interactive quizzes, puzzles, mathematical problems etc. sent to mobile devices. 2) Promotes the use of voice, text and multimedia messaging among peer-to-peer mentors and study groups. 3) Tailor learning for students with special educational needs, for example hearing impairment. 4) Improve literacy and numeracy levels among students and 5) Facilitates collaborative and project based learning. The survey based research concludes that mobile devices help specifically youth at risk in education by preparing students before class by offering introductory material, set the context etc. and by follow up on class by summarizing key points of learning etc. (Rutkauskiene, 2012, 99-100). Furthermore, the use of mobile devices as back up for computers and as preparation for exams is useful. Finally, the report concludes that using mobile devices for organizational information and assessment of learning might support youth at risk. However, like most of the research available on mobile technologies in education, the report focusses mainly on the learning opportunities and less on the personal and social aspects of being students.

However, in the field of psychiatry, mobile technologies also seem to be taking place in practices of research as well as treatment, and the incorporation of various mobile devices in support of prevention and treatment initiatives across biomedical and behavioral disciplines is growing rapidly (Ben-Zeev, 2012). Naturally, psychiatric patients and young people on the margins of the educational system are quite different in terms of characteristics, behavior and life situations. However, they also seem to share the same vulnerability when it comes to engaging in ordinary systems and to trusting new practices and routines. Therefore, we find it interesting to find evidence that given the appropriate training, even individuals with schizophrenia can and will use various mobile technologies (Ben-Zeev, 2012). These studies show that mobile devices successfully assist mobile research and treatment development for example by patients self-reporting (Ben-Zeev et al., 2012), by improving the relationship between clinician and patient (Oorschot et al., 2012), and by providing important information for psychoeducation and treatment personalization. This shows the potential for the use of mobile devices to self-assessment, strengthening relations among students and teachers or mentors and by providing information for example on mental health needed by the students.

It seems that the pivotal question in developing a mobile app for onboarding and retention is whether the intension of the app is to strengthen retention via supporting their motivation for learning or via supporting the students' personal and social engagement in their own educational path. Alternatively, if it is possible to address both at the same time.

Summary of best practice

Based on the existing insight into processes of dropout and retention from the literature and the best practice study among the partner institutions, we wish to conclude by emphasizing the following points of attention for best practice with the building of trust and safe relations running as recurrent theme through them all.

- **Individual measures:** A warning system that highlights at risk students position in relation to dropout, individual support by a mentor/supervisor/contact teacher focusing on extra-educational support, academic support focusing on academic difficulties and needs for support, initiatives that support the students sense of coherence and meaning in their study life.
- **Social measures:** Initiatives that support focus on the social environment in class as well as outside school, initiatives that support frequent and relevant communication and dialog between students and teachers / counselors concerning both study activities and other broader personal issues.
- **Institutional measures:** Initiatives that focus on teachers' pedagogical competencies, the learning environment and focus on at risk students, focus on a multi-professional and collaborative approach
- **Onboarding measures:** Activities like information sessions, information hub, formal exercise in which they might train fundamental practices in education, social activities introducing them to each other, information about events or relevant study activities.

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