Cities for Learning – Gentlestudent
The City as a Medium for Acquiring 21st Century Skills

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Abstract

Students are inextricably linked to life in a city, where they face challenges during their study period and often take their first truly independent steps in life. The city is not only an important 'living' environment for students on their way to adulthood, but can also be considered as a dynamic learning centre where they can seize many learning opportunities. Various community service learning projects show that enrolling students in authentic community projects is not only enriching for the city, but for the professional development of students as well. Such projects promote in-depth learning, but also require a great deal of coordination and support from educational institutions and the professional field.

In the design study 'Cities for learning - Gentlestudent', we investigate how digital technology can connect the talents, ideas and knowledge of students with the needs of the community without direct intervention of the educational institution. Secondly, we explore how students can be encouraged to work more autonomously, starting from their own learning questions. Finally, we examine how we can valorise experiences from the informal curriculum in the formal curriculum and in function of lifelong learning by using microcredentials in the form of open badges.

Keywords: Community Service Learning; Open Badges; Beacon Technology; 21st Century Skills; Cities for Learning; Lifelong Learning

1. Introduction

Artevelde University College focuses on meaningful and in-depth learning and does this in constant dialogue with the students themselves. It believes in the growth potential of its students and wants to encourage them to act professionally, to think critically and to become the person in the world that they can and want to be. (Educational concept, 2015).

In order to provide future-oriented education to students, Artevelde University College defined five strategic Artevelde-wide learning outcomes (Demedts & Van Puyenbroeck, 2016): digital literacy, sustainability, global citizenship, entrepreneurship and research skills. These learning outcomes are linked to 21st-century skills which we believe every professional will need in the future.

| Digital literacy | Sustainability | Global citizenship | Entrepreneurship | Research skills |

Figure 1. Overview of the Artevelde-wide learning outcomes

Between 2016 and 2020, the generic learning outcomes will be permanently integrated in all curricula of Artevelde University College through learning pathways, learning objectives, educational practice and assessment. We have already observed that the risk of overloading the formal curriculums is never far away. With the introduction of a self-directed and self-regulated curriculum (Winne, 1995; Schunk & Zimmerman, 2008) we try to deal with this in a constructive and creative manner. Instead of offering all learning opportunities in a controlled manner, we place more emphasis on the personal initiative of the students. The emphasis is more on 'how students learn' than on 'what students learn'. For example, a student in the teacher training programme will, on his own initiative, develop an internship assignment with sustainable materials. In this way, he will not only work on didactic competences, but also on the competence of sustainable development.

2. Cities for Learning

A next step in this thinking process is to examine how students cannot only work on these generic learning outcomes within an educational context, but also in an informal setting, e.g. the city where they study.

There is no clear definition of the concept City for Learning or learning city. However, what different definitions do have in common with each other is that learning cities want to

make an effort to highlight innovation and learning in terms of the further development of the city. The term learning "(…) covers both individual and institutional learning. Individual learning refers to the acquisition of knowledge, skills and understanding by individual people, whether formally or informally. It often refers to lifelong learning, not just initial schooling and training" (Larssen, 1999). In addition, UNESCO (2017) states that cities are "(…) on the frontline of the battle for sustainable development. (…) They are also sites of continuous exchange of knowledge and ideas; places where people live, work and learn. As such, every city has the enormous potential to stimulate and support learning among their inhabitants in ways that can help tackle existing issues, strengthen social cohesion and solidarity, and transform the prospects of urban communities for the better". The city can thus be seen as an environment where formal and informal learning can contribute to the further development of the city. Because of the enormous potential offered by these authentic learning opportunities, it is therefore extremely important that such forms of learning are made possible to allow the city and its inhabitants to develop further in order to make an active contribution to society.

Students can find many learning opportunities within the dynamic context of the city, as a result of which the link with the concept of Community Service Learning (CSL) can be made. CSL is an experiential educational form that links academic learning content to a social commitment and which students then critically reflect on. CSL is therefore an added value for students, the city and the educational institution. Students learn to adopt a critical and problem-solving thinking attitude in an authentic context, the city and its residents find an answer to their needs, and the educational institution creates sustainable local networks. Nonetheless, there are also disadvantages, such as the large time investment for the coordination and supervision by the educational institution and the professional field. Moreover, the degree to which students are motivated for this type of project varies, especially if they are obliged to take on a commitment. Finally, these learning experiences are often also difficult to evaluate. The learning contexts differ so much that it is not always easy to determine whether a competence is acquired at beginner, intermediate or expert level.

3. Research questions

In the design study 'Cities for learning - Gentlestudent', we first want to study (1) how digital technology can connect the talents, ideas and knowledge of students with the needs of the community without direct intervention of the educational institution. Secondly, (2) we will explore how students can be encouraged to work more autonomously, starting from their own learning questions. Finally, (3) we want to examine how we can valorise

experiences from the informal curriculum in the formal curriculum and in function of lifelong learning by using microcredentials in the form of open badges.

4. Design study methodology

In the spring of 2017, the Office of Educational Development and Internationalisation of Artevelde University College started with the development of an internally funded educational innovation programme called Gentlestudent. The project consists of two phases. The first phase is the design phase consisting of five different work packages. The second phase is the pilot phase in which students from the above-mentioned departments will start working in Gentlestudent and during which we will conduct evidence-based research into the effectiveness of our approach.

4.1 Work package 1: Development of the stakeholder network

In order to use the city as a learning centre, an exploratory analysis was carried out with various stakeholders in the context of the development of Gentlestudent. Together with the City of Ghent, library De Krook, experts from Lab9K, Foresight Digipolis and internal stakeholders (students, lecturers, departments, staff members), possibilities were explored for using beacon technology to provide students with learning opportunities which refer to the five generic learning outcomes, at various locations in the city.

4.2 Work package 2: Exploration of beacon technology

Beacons serve as digital transmitters to which a concrete learning opportunity can be linked. As soon as a smartphone comes close to this beacon, the signal can be picked up via Bluetooth and a push notification of a learning opportunity can then be displayed on the user's device. These beacons are placed in accessible places in the city so that Artevelde University College students receive a notification of the initiatives in a certain neighbourhood via the app on their smartphone. The use of this technology was further developed and refined together with students from the Graphic and Digital Media programme at Artevelde University College.

4.3 Work package 3: Discourse analysis of learning outcomes

Within an interdisciplinary working group at Artevelde University College, a discourse analysis was held on the different learning outcomes (see figure 1); (1) entrepreneurship, (2) digital literacy, (3) global citizenship, (4) research attitude and (5) sustainability. Learning objectives were linked to these learning outcomes in a subsequent phase. These serve as inspiration for the various departments and stakeholders that help shape Ghent into a City for Learning through Gentlestudent. External stakeholders are involved in this phase via a resonance group that keeps track of the entire development process. During a first

recruitment phase, the resonance group develops a number of concrete learning opportunities that are linked to beacons (see work package 1). For each learning outcome a number of learning opportunities are formulated at every level (beginner, intermediate, expert). Within Gentlestudent, we distinguish three levels that are inspired by Miller's model of competence (1990): know, know how, show and do.

Expert: within this level, the learning opportunity describes an expected behaviour in which the student has to take on a high degree of autonomy and is expected to start working independently in an authentic context.

Intermediate: within this level, the learning opportunity formulates an expected behaviour in which the student works with a lesser degree of autonomy.

Beginner: within this level, the learning opportunity focuses more on objectives that are characterised by the acquisition of knowledge and insight.

Thanks to Gentlestudent, Artevelde University College students can find the learning opportunities collected by the professional field and select learning opportunities in order to make a positive and social contribution to the quality of a community or existing initiative. For the (Gentle)students, the platform also offers an opportunity to make their social engagement and professional identity visible.

4.4 Work package 4: Development of the app, website and open badges

A team of students of the Graphic and Digital Media bachelor programme, was assembled and consists of: developers, photo designers and graphic designers under the supervision of a lecturer. Together they are responsible for the technical and graphical development of the app, website and open badges (see work package 5). In the meantime, there are sufficient moments during which the technical development and substantive needs are attuned to each other, taking into account the input from various stakeholders.

4.5 Work package 5: Development of the didactic principles and the assessment

Gentlestudent works according to the principles of gamification in which game design elements are used in a non-game context (Deterding et al., 2011). This form of gamification is made possible thanks to the use of open badges[1] which function as microcredentials. Such a credential illustrates and confirms the acquisition of a specific skill and the successful application of a 21st-century skill in a specific context. Such an open badge, also includes the concrete description and achieved objectives that are linked to a specific learning opportunity.

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[1] More information about open badges via https://openbadges.org

The value of an obtained badge can be compared to obtaining a paper certificate, but in a digital form that is unique and which is provided with the necessary metadata so that the uniqueness of the badge can be ensured. Furthermore, there are two possibilities for obtaining a badge. (a) A badge can be awarded to a student by an external stakeholder when the intended objective has been achieved. However, (b) a badge can also be claimed by a student. Students may already have demonstrated in a different setting, which differs from the learning opportunity described via Gentlestudent, that they have acquired a certain skill. When students subsequently wish to claim the badge without using Gentlestudent, they only have to add an artefact confirming that the skill has already been acquired. This can then be confirmed by Artevelde University College and the badge can be awarded to the student.

This allows students to collect various badges that can be claimed or awarded via Gentlestudent or other initiatives. The earned badges, which are based on open standards, can be gathered on various platforms. The Mozilla Backpack[2] environment is a platform on which such open badges can be collected in order to keep an overview of the acquired skills in various settings and through a diverse range of initiatives.

5. Vision and hypotheses

Our vision on learning in the city is represented in the figure (figure 2) below. Learning opportunities in the city can be organised via the formal curriculum and via informal opportunities offered by stakeholders in the city. In both settings a student is working on different competencies and 21st century skills and these could be recognized and valued either via open badges or more traditional ways such as certificates or diplomas. These credentials create the potential to be acknowledged and can then form the bases of lifelong learning via an increased level of self-directed learning and participation in professionalization activities.

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[2] More information about Mozilla Backpack can be found via https://backpack.openbadges.org.
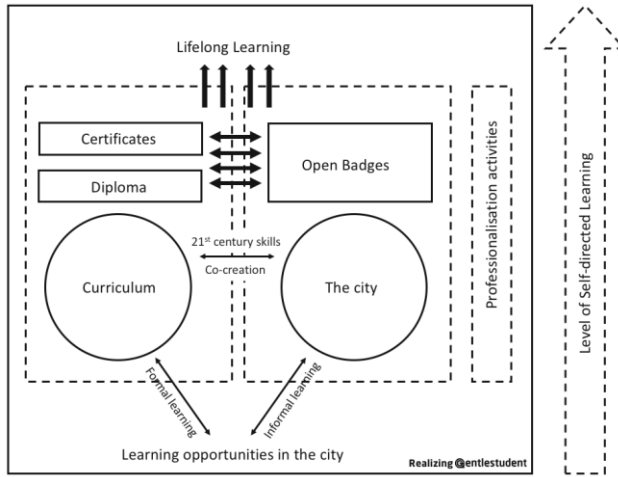
Figure 2. Model for the realisation of Gentlestudent in a City for Learning

Moreover, UNESCO (2017) states that a City for Learning promotes lifelong learning and describes the learning city as a city which:

- effectively mobilises its resources in every sector to promote inclusive learning from basic to higher education;

- revitalises learning in families and communities;

- facilitates learning for and in the workplace;

- extends the use of modern learning technologies;

- enhances quality and excellence in learning; and

- fosters a culture of learning throughout life.

This description makes it clear that when a city wants to be a City for Learning, it must meet the above requirements. Artevelde University College wants to meet these requirements through Gentlestudent by promoting learning as mentioned above, involving various stakeholders and responding to the needs of the residents in Ghent.

Hypothesis 1: By using modern learning technologies and platforms, Gentlestudent wants to make informal learning unambiguous and tangible without requiring involvement of the educational institution at the level of every student.

Hypothesis 2: By giving students a choice between learning opportunities, by offering these in an authentic context and by incorporating an element of gamification, we believe that the motivation of students to work autonomously will increase.

Hypothesis 3: Through the use of microcredentials in the form of open badges, experiences from the informal curriculum will be valorised in the formal curriculum and the professional growth in function of lifelong learning.

After the pilot phase has been completed, we will be able to evaluate the extent to which our hypotheses are confirmed or not.

6. Discussion

The involvement and commitment of the external stakeholders should not be underestimated. How can we define the learning opportunities in such a way that they allow students to get to work in the most autonomous manner?

We suspect that many students already assume tasks in a youth movement or that they volunteer for a good cause. We need to question whether Gentlestudent will not create a Matthew effect. Perhaps the strong students with sufficient self-directed learning and self-regulated learning skills in particular will focus on the learning opportunities of Gentlestudent. While students with fewer opportunities or students who have to combine their studies with work or a family are not in a position to take on this additional task.

The use of microcredentials in the form of open badges has the potential to be very valuable in the Open Recognition approach that is currently being explored (MIRVA, 2018). Furthermore open badges are nowadays still very innovative in Europe. As a result, the support base for the recognition of the value is still minimal. Further research outside of Europe needs to be taken into account in order to gain insight in lessons learned. Sensitisation and clear visions supported by good practices can ensure that open badges issued by recognised institutions become meaningful for society and the employers of tomorrow. It is therefore important that the valuation of certain acquired skills is done correctly so that the value of the badge is not an overestimation or underestimation of reality. Monitoring quality and ensuring that microcredentials can add value to society still needs to be determined.

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