Supporting students to self-direct intentional learning projects with social media

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ABSTRACT

In order to be able to cope with many authentic challenges in increasingly networked and technologically mediated life we need to construct opportunities for participants in higher educational settings to practice the advancement of self-directing intentional learning projects. In addition to teaching general strategies for carrying out these projects more emphasis should be put on acquiring some expertise regarding the selection and combination of a diverse set of technological means for own purposes. The various practices that are emerging around social media seem to be a promising field of experimentation in this regard. The knowledge and skills needed to select, use and connect different social media in a meaningful way form an important part of the dispositions in self-directing intentional learning projects. This paper argues for a course design in which participants are not simply engaged in developing knowledge, skills and orientations in regard to curricular subject matter and the use of technology but actively involved in self-directing intentional learning projects with the support of social media. The theoretical framework of this research is inspired by conceptual ideas developed within iCamp (http://www.icamp.eu) project. We will illustrate our line of argumentation with some empirical data collected from a pilot course taught at Tallinn University, Estonia.

Keywords

Self-directing intentional learning project, Social media, Personal learning environment, Course design

Understanding self-directing learning projects

An essential aspect of today's postmodern, technologically rich society is to develop the ability to take control and responsibility for our own education, learning, and change. Charles Hayes has claimed that "when we fail to take control of our education we fail to take control of our lives" (Hayes, 1998). Thus, educational experiences need to be constructed in a way that provides opportunities for participants and facilitators to organize and manage their activities in technologically rich contexts. This is an essential aspect to become increasingly a self-directing person (Knowles, 1975) in today's world.

An extensive amount of research about self-direction and related concepts (self-organization, autonomous learning etc.) exists and has produced rather heterogeneous theoretical understandings in the field of education. Most often self-direction in education is defined as "a process in which individuals take the initiative with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating outcomes" (Knowles, 1975). It is important to note that self-direction does not mean the total isolation and purely individual work and activities, rather it is seen in the social context, where the "self" is influenced by others (Lindeman, 1926).

Candy (1991) offers an overview of the various strands of research that can be found under the label of self-direction in education. Activities and strategies of actors who either want to support or execute „self-direction" are the focus of a research perspective that Candy calls **activity-oriented**. Such an activity-oriented perspective can either be applied to actors who operate within or outside formal instructional settings. Candy (1991) suggests speaking of *autodidaxy* in reference to the latter and of *learner control* if actors operate within formal instructional settings.

The second **disposition-oriented** perspective refers to personal attributes and orientations that influence the readiness and ability of actors to self-directing learning and change projects in various contexts. Candy distinguishes between *personal autonomy* referring to the more philosophical strand of theorizing that focuses on individual

freedom and *self-management* focusing on the willingness and capacity to conduct one's own intentional change and overall education (Candy, 1991).

While we appreciate Candy's outstanding attempt to clarify the conceptual landscape, we find the term of "learner control" for activity-oriented research on self-direction in the realm of formal instructional settings to be somewhat misleading. We thus simply speak of *self-directing intentional learning projects* (in formal educational settings) in higher education. Nevertheless, we do so from a decidedly activity-oriented perspective.

Selecting appropriate networked tools and services for self-directing intentional learning projects in distributed settings

It seems fair to say that most explicit attempts to foster self-direction in higher education focus exclusively on the shift of responsibility in relation to the scope, focus and depth of the subject matter studied; aspects of pacing and sequencing; and criteria and procedures of evaluation and assessment. It is usually neglected that many individuals in our increasingly networked societies, find themselves regularly collaborating within distributed activity systems (Fiedler & Pata, 2009) in which co-workers are not physically present all the time and in which activities are thus inevitably technologically mediated. Therefore, we suggest that contemporary conceptualizations of "self-direction" in education need to be expanded. Negotiating and making decisions on technological tools and services that are appropriate (or at least promising) for mediating particular activities needs to be considered as an important aspect or "expression" of self-direction in education.

Hiemstra (1994) has stated that taking personal responsibility in education refers to individuals assuming ownership for their own thoughts and actions, which does not necessarily mean control over personal circumstances or environmental conditions in all parts of life. Nevertheless, developing and fostering at least partial personal control over the technological means that mediate and support work- and study-activities seems to be an appropriate and timely educational objective for higher education. We suggest that taking initiative and responsibility for one's own learning and change increasingly includes and requires the ability to select adequate mediating technologies to enrich a *personal learning environment*. We understand personal learning environment as a rather broad and subjectivist concept. A personal learning environment entails all the instruments, materials and human resources that an individual is aware of and has access to in the context of an educational project at a given point in time (See Fiedler & Pata 2009, for more detailed account on this aspect). Networked tools and services offer an ever-expanding variety of means to support, amplify, and enrich our personal environments for learning and change. The ability to gain access to, and choose selectively from a full range of tools, services and other resources thus needs to be considered as an important aspect and expression of self-directing intentional learning and change in education. Negotiating and selecting networked tools and services for collaborative action can help to externalize thought processes, understandings, and expectations within a group of actors that otherwise remain obscure and invisible. While trying out different tools and services actors can become aware of their thinking process, missing knowledge, and lack of understanding. Analyzing what kind of tool or service appear to be suitable for reaching a particular action goal under specific conditions, presumes participants reflecting upon perceived affordances, expectations, orientations, and so forth. In principle, this often requires a trial-error approach to find out how the potential of existing resources can be un-locked and utilized (Brockett, Hiemstra, 1991).

Learning contracts to support self-directing intentional learning projects

Though educational research has largely ignored the need to expand notions of self-directions in the direction of control over technological means to mediate one's productive and conversational actions, it has produced some well researched and validated (cognitive) tools for fostering various aspects of self-direction in education. One such instrument is the personal learning contract (PLC). PLCs usually require some structured, written outline of what and how an individual (or group) intends to achieve within an intentional project of learning and change (Harri-Augstein, 1995). The creation, cyclical adaptation, and elaboration of PLCs is embedded in a set of conversational procedures that normally entail a facilitator and/or peers who help to clarify and explicate the essential components of such a "contract" with oneself. Thus, the main function of facilitators is to support participants drafting, refining, and revising their own contracts.

As we have mentioned above, in adult education the use of "personal learning contracts" that are embedded in a conversational coaching approach are a well documented and evaluated approach (Harri-Augstein, 1995). In its most simple form a learning contract consists of an explication of *purposes* that drive one's project and that describe what one wants to achieve; a statement on *strategies*, explicates what activities one intends to carry out and what resources might be used; a statement regarding the desired or expected *outcomes* describes some criteria that would allow evaluating if or how successful a project was. What is actually carried out during the project is documented in *records of action*. The core statements on purpose, strategy, and outcome can, and indeed should be, revised and adjusted while the project unfolds. In a final *review* procedure the overall material is used to reflect and analyse the process that actually took place (Harri-Augstein, 1995).

A learning contract applied in such a way, guides an iterative process. Participants can draw parallels between their tentative plans and their actual study process and analyze the differences. This provides an opportunity to identify the direction of development and to formulate the next contract (Harri-Augstein, 1995). The main purpose of such a systematic, practical procedure is to empower participants to think positively and constructively about their study- and work skills and to be more aware of what and how they study (Harri-Augstein, 1995). Learning contracts enable individualisation and externalisation of a person's thoughts and pursuits in respect to her goals and strategies.

In our teaching experiment we tried to make use of the general format of conversationally grounded PLCs within a landscape of social media tools and services to support the gradual shifting of the locus of control in regard to a variety of instructional functions that are normally provided by the representative of the formal educational system.

Case description

Overview of the course and landscape of social media

The Master's level course "Self-directed learning with social media" in Tallinn University was designed to create challenging situations for participants to advance their dispositions for self-directing learning projects with the support of social media tools and services.

The course was designed and carried out by two facilitators who work at Tallinn University, Estonia, as researchers and lecturers in the field of educational technology and who are rather proficient users of social media. 26 students participated in a pilot course in autumn 2007. The background of the participants varied a lot. The majority of participants were active secondary school teachers, while the rest were full time master students, who predominantly had gathered some work experience before enrolling for the master program. However, ICT skills varied considerably among the participants. They ranged from being limited to regular use of email clients and Web browsers to high level programming skills.

The course lasted for eight weeks. In this period three full day face-to-face contact meetings were organized. The purpose of the meetings was to give an overview of the course structure and its requirements, to provide some introductory insight to the theoretical concepts, and to provide a glance of a set of networked tools and services that participants might find useful for carrying out assignments in a distributed and mediated work setting. The remaining study activities were carried out from the distance, making use of a variety of networked tools and services.

The facilitators seeded a distributed technological landscape (see Figure 1) on the basis of social media, leaving aside any centralized and closed systems hosted by the institution (Fiedler & Kieslinger, 2006). The central core of this selection of loosely connected tools and services was a course Weblog (Wordpress), where participants were provided with an updated overview of ongoing course activities and necessary materials in the form of Weblog-posts and hyperlinks. In order to get a better overview of the participants' progress and ongoing activities, a page was created on an open-access mash-up service (Pageflakes) to aggregate the Webfeeds of all participants' personal Weblogs and to display all the resources that got bookmarked collaboratively on a social bookmarking service (Del.icio.us) for this course.

Furthermore, facilitators or participants could leave messages to the entire group on this mash-up service page. Synchronous communication tools like MSN messenger and Skype connected facilitators and participants for real-

time conversations. Beyond this pre-selected set of tools and services, participants enriched their personal landscapes with a wider selection of social media according to their individual needs and preferences.

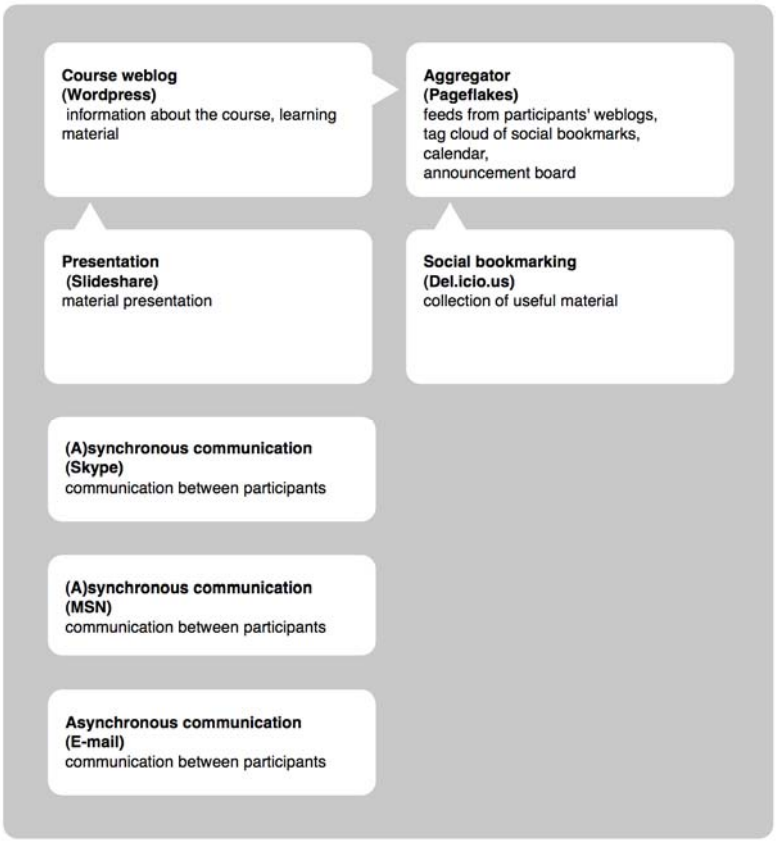

Figure 1. Landscape of tools and services used in the course

Course framework

The general purpose of the course was to introduce different learning methods with the support of social media. Special attention was paid to the notion of self-directing learning and change projects. A range of techniques and assignments were given to participants with the purpose to stimulate their self-directed acts. Participants were asked to carry out two assignments, one individually and the other one in groups. For both assignments participants had to think of an authentic work or study activity and come up with the real working technological landscape that supports this particular activity.

The idea of learning contract was used also in the course, but in a slightly modified way as described above. In order to help participants to exercise control over their study activities they were asked to draft an individual personal learning contract for each of the two assignments. Participants were recommended to explicate the core parts of their personal learning contracts each time before they were given one of the two major assignments during the course. The contracts were revised after the assignments had been carried out and then reflected more deeply at the end of the course. Reflection was done in an essay format, where participants were asked to review their personal learning contracts and their actual learning process. Participants reflected in the light of their initial plans and projections upon the actual activities they had carried out and the outcomes they finally had achieved. All individual and group work was supported and mediated by the tools and services the participants had selected. Participants were given complete freedom and full responsibility over their activities and the technological means for supporting their performance. They were encouraged to take control over both, the objectives and the means.

Although participants had been given a final deadline for assignment completion, they were encouraged to follow their own pace while respecting general organizational constraints such as the overall duration of the course. The deadlines of the assignments were meant to function as indicators for planning activities within the organizational time limits.

To foster personal responsibility, facilitators also provided a variety of alternative study resources to participants. In addition to reading materials on various related topics (self-directing learning projects, social media, collaborative learning, learning management systems, and so forth) a set of social media were introduced from which participants later could choose according to their personal needs and interests.

Research design

This research followed elements of action research (Creswell, 2002). It tried to alter a rather traditional approach to course design, while observing the effects of these changes on participants' experiences (Breakwell et al., 2000). The purpose of the research was to bring about changes in course design and the overall learning/teaching process while trying to map and understand the consequences of these changes at the same time.

The overall change process consisted of several interrelated stages:

Stage1: Definition of the changes made in the course design
The first stage of the research was to identify and describe intended changes for the course design. Here we drew from research, debates and discussions generated in the extensive body of literature based on self-direction, aspects of learning environments and use of social media in education and the ongoing work within the iCamp (http://www.iCamp.eu) project.

Stage 2: Design and implementation of remedy in the course design
The course was redesigned to incorporate the changes and carried out with master level students.

Stage 3: Observation and data collection
The third stage refers to the actual learning/teaching process, where the changes were observed and data collected.

Stage 4: Analysis of the impact of changes and reflection
This stage investigated students' perceptions of their experiences while participating in the redesigned course.

Research questions

The purpose of this research was to determine the possibility of applying social media for fostering and promoting self-directing intentional learning projects into a master level course design and to investigate students' responses to that learning situation. This research asked the following questions:

1. What were the challenges for the students in this kind of course design?
2. How did the students perceive the concept of self-directing their intentional learning projects?
3. To what extent support personal learning contracts the self-directing of intentional learning projects from the students' perspective?
4. What is the role of social media while self-directing intentional learning projects from the students' perspective?

Data collection

26 students participated in this experimental course. Intrapersonal data was on focus, where cognitive and emotional aspects of the students were considered (thoughts, feelings, attitudes). A direct elicitation method was used for data gathering (Breakwell et al., 2000): in the form of students' essays about their experiences and open-ended questionnaire.

Data analysis

The framework for data interpretation was based on the research questions and the changes that were brought about the course design (personal learning environment, learning contract, reflective task, social media, different role of the facilitator)**.** Data analysis was done qualitatively with the purpose to explicate perspectives of the participants in this course, to interpret and discover patterns within the students' accounts.

Techniques of qualitative analysis recommended by Miles and Huberman (1994) were used to analyze the data collected from the students' essays. The analysis involved a three-step process: data reduction, data display, and conclusion drawing and verification. The analysis was done with the assistance of HyperRESEARCH, a computer-based qualitative analysis program. Data from the essays was initially coded according its set of *a priori* codes that were derived from the research questions together with sub-themes that emerged within these categories.

The process of coding the data is summarized in Table 1. The codes were gradually elaborated by bringing in additional themes as sub-themes while working with the data.

In addition to the students' essays, an open-ended questionnaire was conducted after the course had finished. Open-ended questions allowed students to respond using their own vocabulary and terms to describe their expectations regarding the overall course and the role of facilitators in particular; their challenges and difficulties in this course; their understanding of self-directing intentional learning projects; their opinion about learning contracts as a means for self-directing intentional learning projects; and their previous and prospective use of social media for study or work.

The answers to the eight questions (behavioral, background and opinion/experience questions) of the paper-based questionnaire were analyzed qualitatively. Questions that referred to similar aspects were analyzed together. This was done with questions 1 and 2, 4 and 5, and 6 and 7 respectively. The analysis followed a top-down approach in which the data was categorized according to *a priori* codes based on the research questions and the changes made in the course design. As the number of the students and the length of their answers were not that extensive, data analysis was done manually. 24 from 26 participants returned the questionnaire.

Table 1: Steps of the data analysis

Analysis process	Rationale	Software
Data Reduction process: cutting words and phrases that were not relevant for the current analysis; segmenting data	Reduction of the data in order to discard, sort and organize the data in a way that allows to collect reasonable segments of data	Scrivener
Coding: coding text according to *a priori* codes determined by the research questions and the changes made in the course design as well as inductive codes which emerged from the data	Coding of the data in order to focus, organize and process data	Hyper-RESEARCH
Sub-coding: codes were revised and compared within the data collected from the essays as well as with the data collected from the questionnaire with the purpose to merge them into categories based on their relationships	Sub-coding of the data in order to abstract and condense the data for permitting conclusion drawing	Hyper-RESEARCH
Ordering and displaying: themes were determined and generalizations were made.	Taking the reduced and coded data and displaying it in an organized, compressed way through such means as selection, paraphrasing and subsuming in a larger pattern that permits conclusion drawing	Hyper-RESEARCH
Conclusion drawing: conclusions were made and written up	Decisions about the meaning of data and testing validity of findings by noting regularities, differences and similarities, explanations and propositions were made	Scrivener
Verifying: conclusions were verified by referring back to the original data		

The overall data analysis was initially done separately for the essays and the questionnaires. After the coding system had begun to consolidate, the data from both instruments was merged.

Results

What were the challenges for the students in this kind of course design?

One of the purposes of this course design was to create challenging and authentic situations for the students regarding the technological support of their own learning environments and taking initiative and responsibility for their activities.

Although it was mentioned in some students' essays that they had experienced some kind of problems, the questionnaire results showed that 5 students out of 24 claimed they had had no major difficulties and challenges in this course. However the main challenges were the following:

1. Challenges related to terminology
2. Challenges related to learning contracts
3. Challenges related to assignments (individual and group work)
4. Challenges related to tools and services

Challenges related to terminology

The analysis of the questionnaire and essays showed that 11 students experienced information overload in the beginning phase of the course. Insufficient explanation about new terms and concepts resulted in some students feeling frustrated. They claimed they had received too much new information and new terms at the same time, which made it complicated to make sense out of this oversupply. The students said:

„The terminology was new and not understandable for me"

„In the beginning I thought I need a dictionary, because so many new terms were mentioned"

It is ineluctable that the introduction of new concepts, new tools and services as well as an unusual course design carries terminology that is not necessarily familiar to the students. One student found the whole course design with its activities quite challenging while two other students claimed that they had only experienced problems understanding the concept of self-directing" their learning projects. The students said:

„The subject and the structure of the course were new to me"

„In the beginning the whole course appeared like rocket science"

Challenges related to learning contracts

Challenges related to the learning contracts refer mainly to the early stages of formulating the different parts of such a contract. Seven students claimed they had experienced problems trying to explicate their goals, strategies, tools and evaluation criteria. The students said:

„It was complicated to formulate the evaluation criteria. My whole life others have decided that"

„All of the sudden I had to think through my whole learning process – what exactly am I going to do now? What do I want to achieve?"

Very few students had heard about learning contracts and for some of them it was unclear why it had to be done, especially since it did not form a major part of the final grading. The student said:

„I didn't understand the need for creating a learning contract... why do I have to do this?"

It was obvious that most students were not ready to take initiative and responsibility for their own learning. The main reason seemed to be a lack of experiences and rationale in this regard.

Challenges related to assignments

19 students out of 26 claimed that the first assignment was difficult, confusing and unclear. The main reason for this appears to be the new terminology used by the facilitators and the unfamiliar distributed course environment.

While the first assignment was confusing for most students, the second assignment that focused on group work was readily understood. However, some other challenges occurred.

Eleven students claimed that group work on the distance was complicated because of unreliable technological tools and services, such as synchronous editing of web-based documents or schemes. The students found it very time consuming to find a common understanding among group members, to communicate, and to regulate the group' s activities without meeting others face to face. The students said:

„Group work was especially difficult for me as I had never done it in this way"

„I must say that it is very difficult and time consuming to carry out group work on the distance"

Four students found it difficult to find common time frames for the group work to discuss issues synchronously. The students said:

„It is very difficult to find a common time frame that is suitable for everybody"

„Unfortunately the members of the group had so different time schedules and therefore taking common action was rather limited"

However it is interesting to note that the students did not encounter problems choosing the right tools and services for carrying out their group assignments on the distance.

In addition, a couple of students considered it unusual presenting home assignments in their personal Weblogs in a format that was public and easily accessible. The student said:

„But the idea to put everything to my Weblog didn't put a smile on my face"

Challenges related to tools and services

The questionnaires and essays showed that all the students were familiar with e-mail services prior to the course. Some of the students had had experiences with video- and photo-repositories as well as Weblogs. Weblogs had been mainly used in other course settings. However the majority of the students were unfamiliar with the tools and services introduced and used during the course (see Table 2). Not surprisingly the main challenges that emerged from the learning process were related to new tools and services as well as the learning environment as a whole.

Table 2: Tool use before and after the course

Type of tools and services	Tool use before the course	Potential tool use after the course	Possible explanation
Social bookmarking (Delicious)	6	11	This tool was part of the course environment and the students were obliged to create an account in order to be able to find their Weblogs
Video repositories (Youtube, Google video)	10	1	Due to the prior use of these tools and services the students might forget to mention them again
Photo repository (Flickr)	7	0	
Weblog (Wordpress, Blogspot)	9	17	Weblogs were used in the course as one of the obligatory tools
Aggregators (Netvibes, Pageflakes)	4	9	An aggregator was part of the course environment
Collaborative writing and drawing (Google docs, Gliffy, Vyew, Bubble)	4	9	Their applicability were tested and proved while doing group work
Web-based office (MS Office	2	3	These tools were not directly used in the course,

Live, Zoho)			neither by facilitators nor the majority of students
Wiki (Pbwiki)	1	4	
Presentation repository (Slideshare)	0	3	This tool was used by the facilitators during the face to face meetings

Six students from 24 claimed that they had difficulties with the large number of different tools and services introduced during the course. This meant it was challenging to keep up with understanding the purpose and use of these tools and services. Furthermore, the students considered the registration processes, getting oneself acquainted with tools and services, as well as remembering all the login details (mentioned by five students) as challenging. The biggest challenges for two students were finding and combining tools and services, and getting an overview of the overall landscape of tools.

Furthermore, two students claimed they had had not enough time to go through all the tools and services in depth, since their level of interest in the tools and services and the overall course pace was not aligned.

In conclusion, the main challenges for students in this course were related to the assignments they had to carry out, since they differed from the type of assignments usually found within traditional course designs. Another major area of challenge was the array of technological tools and services used to support personal learning environments.

How did the students perceive the concept of self-directing their intentional learning projects?

To answer the second research question, the questionnaire was designed to capture the students' insights and opinions regarding the notion of self-directing intentional learning projects. The questions aimed at eliciting positive and negative aspects of self-directing intentional learning projects from the students' perspective.

Ten students pointed out that the most important aspect of self-directing one's own learning is the freedom to choose one's goals, strategies, means, and resources. It is interesting to note that one student focused on the importance of self, self-consciousness and responsibility. The student said:

„When the self and my purposes become more important than what the others expect from me..."

Four students understood the concept of self-directing intentional learning as a constant and conscious development based on one's intrinsic motivation. Three students thought that it is about defining one's needs and interests, and ways how to learn accordingly. The students said:

„Keeping a diary, which means organizing oneself "

„Motivating oneself, reflecting on one's activities and outcomes and defining future direction"

„Analyzing failures and success of one's activities"

The positive aspects regarding the concept of self-directing intentional learning projects were the following: ten students thought that the freedom to choose is the main advantage. This included the possibility to plan one's learning process and topics based on one's needs and interests, the possibility to choose resources, and to follow one's own pace. Furthermore, the possibility to combine work, study and home were considered equally important.

However, the essays showed that too much freedom and and lack of structure can create chaos and can be seen also as an inhibiting aspect for the learning process. Setting up one's goals independently can be seen as positive and negative, since most students experienced that it is not that easy to clearly define one's goals. Some of the negative aspects that were brought up by four students were motivation and responsibility while carrying out self-directing intentional learning project.

Three students pointed out that the unlimited opportunities to acquire new knowledge and information were a positive aspect. One interesting aspect brought out by one student was the following:

„I have to think how to make the best out of the resources that I have at a certain point in time"

Three students thought that the lack of feedback and lack of others support were negative aspects. Wavering from the initial goals, lack of self-belief and fear of failure were mentioned by four students. One student considered the

misunderstanding of the assignment as a drawback. Another student was afraid of making wrong choices in terms of supporting tools and services.

To what extent support personal learning contracts students who are self-directing their intentional learning projects?

In general 21 students from 24 found learning contracts useful and supportive for self-directing their intentional learning projects. Students gave quite different answers in regard to the usefulness of the learning contracts in one's learning process. The following aspects were pointed out:

- 20 students said that it was needed to document activities since it gave a clear overview of what, when and why.
- one student claimed that it offered a clear structure for learning and it helped to develop knowledge
- ...it became personal and it motivated
- ...it supported the achievement of better goals and outcomes
- two students thought that it helped the evaluation of development and the measurement of one's achievements
- two students claimed that it helped to concentrate and choose the focus point, and to coordinate and direct one's activities
- ...it helped to determine what the important activities were
- ...it made a person think

Two students claimed that the learning contracts did not make sense for them and were useless. The students said:

> „This is just an expression of forming one's thoughts and goals"

However one of them saw the general importance for other learners as a support for concentrating and focusing on important aspects in one's learning process.

What is the role of social media while self-directing intentional learning projects from the students' perspective?

As it is seen from the table above (Table 2), the perceived probability of using social media in the future was quite high. 18 students claimed that they intend to make use of some of these tools and services in the future to support their leisure, study or work related activities. Some of the students reported that this course encouraged them to investigate different social media. The main reason for a continued use and exploration of new tools and services is the perceived simplicity and variety of choices and functionalities found in social media. Social media enable for example to provide continuous feedback, to carry out reflective tasks, to draw schemes either individually or in groups synchronously, to mediate group communication, and to work together on common artifact. The students said:

> „Social media give me an opportunity to carry out my tasks despite of the location and the nature of the tasks"
>
> „Social media applications are very effective, not only for the execution of self-directing intentional learning projects but also useful in very different context and conditions"

Despite of these perceived benefits the students wished to receive more supervision and practice for using different social media. From their perspective too many tools and services were introduced in a rather short period of time. Due to the limited time frame they found that their understanding of the tools' nature and their ability for using them remained somewhat superficial.

Discussion

The findings suggest that our re-designed course indeed created some challenging situations for students. The personal reflections on the activities varied a lot among students. They ranged from an experienced match of the activities with predefined personal goals and strategies, to explicit dissatisfaction. A major source of dissatisfaction with the process and outcome appeared to be a feeling of information overload in the beginning of the course and confusion around the given assignments and terminology. Quite many students claimed that in the end of the course

they were able to write down their goals and how to reach them. On one hand, this is a fairly common pattern for novices who try to explore a new domain of knowledge and skill, on the other hand this might indicate that the instructions for the assignments were not clear enough. Some students found it hard to obtain an overall image of the course and its specific assignments and components.

The students predominantly claimed that they had progressed a lot during the course and that this had changed their initial goals and understanding. They understood that the social media they worked with are also applicable in other contexts beyond educational settings, since these tools and services afford to carry out many different activities.

The essays showed that most of the students were rather self-critical in their evaluation of their capacity to identify their own needs, to develop personal learning contracts to meet these needs, and to achieve the goals that they had described within the contracts. It was obvious that the externalization of one's own thoughts and strategies was something rather novel and challenging for all students, since most of the courses in higher education largely ignore students' own learning goals and personal learning environments.

In our re-designed course students found the personal learning contract procedure very useful. One reason for its perceived usefulness seemed to be the instrumental value of the learning contract material for writing a reflective essay on their overall experience and process at the end of the course period. The personal learning contract procedure was described as a means and tool to keep them on track, to structure their own activities, and to monitor their success. Furthermore, students considered the learning contract procedure as a good way of documenting their ideas and thoughts, coordinating their activities and providing means to measure their achievements. They interpreted the learning contract as their own personally constructed "instruction" or guideline for their activities. Some of the students found it motivating, as they were recommended to write down in detail what, how and when to work and study. This provided them with a compact overview of the direction to pursue and the rationale behind their activities. Some students reported that the contracts helped them to concentrate and focus on their activities and not to deviate from the initiated path. Writing down goals and needs turned them into something personal and important for the author, giving her a feeling she was in control of her own activities.

After completion of the assignment many students understood that their predefined evaluation criteria did not make sense and were not really measurable. Furthermore, evaluating themselves seemed to be a new and rather challenging task. It was obvious that the first assignment was quite time-consuming and demanding, due to numerous new terms and social media. This certainly added to the initial problems that students experienced while they were trying to specify detailed goals and strategies. It seemed easier for most students to draft their second learning contract in relation to the group assignment, after they had explicated their goals and purposes, strategies, and intended outcomes already once before in the context of the individual assignment.

However, it appears that different tools and services and new concepts and terms should be gradually introduced over the course period. All students claimed that they had a rather positive experience regarding the acquisition of useful theoretical knowledge and practical skills in respect to the use of social media tools and services and self-directing their own learning projects within formal educational settings and beyond.

Conclusions

It is obvious that outside of formal educational settings individuals (and groups) cannot rely on educational authorities and formal instructional systems to structure and support their activities. We assume that formal education for adults should be designed in ways that allow all students to actually execute and advance their dispositions for self-directing intentional learning projects in general, and within distributed and net-worked settings in particular.

This paper described a redesign of a master's level course called "Self-directed learning with social media" that intended to foster the ability of students to self-direct intentional learning projects in distributed settings. Thus, a significant aspect of this course design was the provision of opportunities to practice the selection of social media for mediating particular activities.

The reflective essays of the participants on their individual learning processes and the administered questionnaires were analyzed to gain an insight into how students experienced their own ability and effectiveness to plan, organize, and manage their own work- and study-activities. The reports of the students and the digital traces of their activities showed quite clearly that they gained considerable knowledge and skills regarding the use of social media for supporting a range of activities. It can be concluded that students indeed acquired some expertise regarding the selection and meaningful combination of a diverse set of social media for their own purposes.

However, it is important to note that rather isolated and short-lived interventions that are constrained by the academic semester rhythm make it difficult to observe any significant changes of students' readiness and capacity for self-directing their own learning and change. Nevertheless, we believe that the course design presented in this paper offers a promising and feasible approach to foster the advancement of a set of dispositions (knowledge, skills, orientations) for self-directing intentional learning projects in distributed settings that are viable for coping with many authentic (educational) challenges in today's increasingly networked and mediated life.

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