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Flipping the Classroom for Health Managers

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Abstract: Offering higher education to adult students can be challenging when using different techniques for activating the students. Adult students that have been in a work life for a shorter or longer period may have a different mind-set about what education is. In some cases, using Flipped Classroom as a way of engaging and activating the students, work very well. In other cases it may be more challenging. In this paper we present research done amongst the teachers/lecturers and students in the Health Manager education at The Inland Norway University of Applied Sciences. Our main research topic has been to disclose what the teachers/lecturers focus on when flipping the classroom, and how the students perceive the different approaches to flipping the classroom. Will it support their learning process and learning outcome? And in what way? And how does it support the teachers/lectures in their pursuit of activating students? The results from surveys and interviews show that the students perceive being activated as contributing towards their learning outcome. Not all of the lecturers make use of Flipped Classroom. The students rate the courses where the lecturer use Flipped Classroom higher with regards to learning outcome, although they are content with the other courses. Important contributing factors are the organization of the "flipped classroom", student input and teachers facilitation, with regards to the learning outcome.

Keywords: Flipped Classroom, activating students, enhanced learning outcome

1. Introduction

Flipping the classroom is about activating students not only in the classroom, but also outside the classroom. Bishop and Verleger define "flipped classroom" as: "an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom" (Bishop & Verleger, 2013).

At The Inland Norway University of Applied Sciences, the most common way of interpreting this is to make learning material such as lecture notes, streaming video and other material available prior to the lecture and then rather than spend time on lecturing, use active learning techniques in the classroom.

For the courses in this study, streaming video was not an option. However, even with lecturing, active learning techniques in the classroom were used, as well as making the material available to the students prior to the lecture in a Learning Management System (LMS).

The students are adults in a work life and the learning objectives for the courses are defined to support and develop the students in their work. Our investigations is here about how flipping the classroom has supported (or not) their learning outcome from the courses.

2. Theoretical backdrop

Activating students is inspired by Piaget (1963) and his theory of constructivist and collaborative learning. To build on previous knowledge and to learn with and from peers both in the classroom, and outside using computer based technology, will support ideas from several theorists with regards to enhancing the learning outcome for the learners.

Vygotsky (1978) and his holistic theory on how the human being is a continuous result of interactive process determined by social and cultural contexts. His "zone of proximal development" can be viewed as a balance of what one is able to learn on ones own and what is contributed through social interaction with others.

Also Gold and Lewin have contributed towards developing the social constructivism, especially through their studies of group dynamics (Gold & Lewin, 1999). Their view of a democracy existing due to a voluntary and participative learned process, influenced not only the theory development on group dynamics, but also

inspired research methods. Lewin introduced the term "action research", and describe a spiralling process where there is an identification of a problem, investigating and planning steps and then evaluating before taking the next step. The process is also a result of participation, and later Greenwood and Levin have presented the model of co-generation of knowledge in action research projects (Greenwood & Levin, 2007).

Kolb's (1984) theory on experiential learning is based on e.g. Gold&Lewin (1999) and Piaget(1950) as it is about learning from experiences. A concrete experience can be reviewed and one can reflect on the experience. Then follows a reflection of what one has learned from the experience, and then it is about testing out what one has learned.
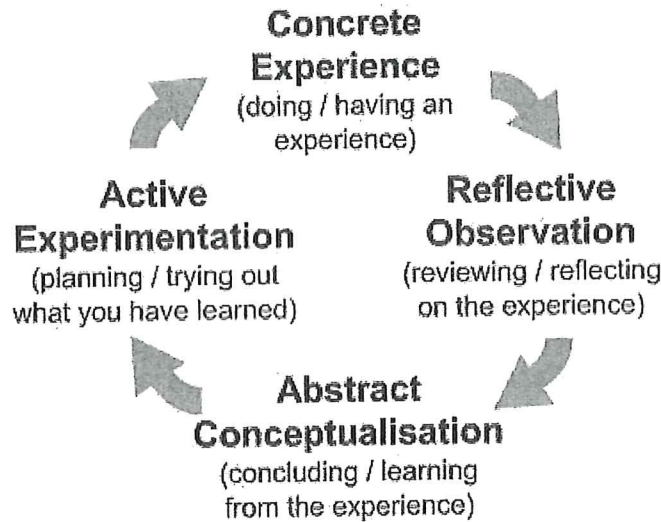
Concrete Experience
(doing / having an experience)

Active Experimentation
(planning / trying out what you have learned)

Reflective Observation
(reviewing / reflecting on the experience)

Abstract Conceptualisation
(concluding / learning from the experience)

Figure 1: Kolb's experiential learning cycle - retrieved from www.simplypsychology.com

Dewey also advocates learning from experience (Dewey, 1902; Dewey, 1938; Dewey, 2005). Drawing on one's background support the learning process as it is building on previous experience, and it is possible to make sense of the reflections on the experiences as they are related to something familiar.

Reflection play a major role with regards to learning (Schön, 1987; Schön, 1991). Donald Schön has contributed towards the understanding of the importance of reflection for learning by introducing the terms "reflection on action", "reflection in action" and "reflection on action in action". Reflecting in action is about reflecting during an action, reflecting on action is about reflecting after the action is finished and reflecting on action in action can also be viewed as a form of meta-learning (Boud, Keogh & Walker, 1985; Filstad & Blåka, 2007). To utilize reflection processes in order to learn from an action is used e.g. in the Norwegian Military. Their use of After Action Reviews is a direct reflection on action in a social environment as they are reflecting with their peers (von der Oelsnitz & Busch, 2006).

The peer learning and the participation in the processes that concerns learning, are described within andragogy (Jarvis, Holford & Griffin, 2003; Knowles, 1970; Knowles, 1984; Knowles, 1990; Mezirow, 1991). To be included and involved will support engagement and ownership to the results, hence, an enhanced learning outcome with regards to learning processes.

This more than suggest activating the students, making them collaborate and drawing on their experiences, and at the same time stimulate reflection processes, will contribute towards an enhanced experienced learning outcome. Technological solutions – such as an LMS – can be utilized to support the collaboration outside the classroom. Also to provide material prior to the classroom experience, may support reflection prior to the activities in the classroom. This is similar to what Cowan (2006) describes and that can be called "reflection before action" to follow up Donald Schön's terminology.

Flipping the classroom has been tested in different types of education, e.g. in engineering studies (John, Kyparisia & Pavlos, 2017), and in Knowledge Management courses (Vold, Bergum, Ranglund, Kiønig, Bakken & Braun, 2017). The important clues have been to facilitate for the activity. To be clear about what is expected from the students, and what they can expect from the lecturer, is a vital component of the facilitation.

3. Method of Inquiry

The data that this paper is based on are collected from a semi-structured interview. Thirteen (13) students have completed all eight (8) modules. Of these 13, 6 respondents were chosen randomly. In order to investigate if they had similar experiences, and what their experiences were with the activities that took place that would be within the scope of "flipped classroom", we conducted semi-structured interviews (Creswell, 2003; Creswell & Clark, 2007; Dalen, 2011). The interview guide allowed for follow up questions in order to allow the interviewer to pursue interesting comments.

The analysis has been based on both pre-defined categories and categories that emerged during the analysis. An example of pre-defined category is "experienced learning outcome", and an example of emerged category is "facilitators role".

The notes taken from the interviews were read back to the respondents. This was the only kind of "memberchecking" (Guba & Lincoln, 1989) that was performed, as the respondents were all asked if they wanted a transcript and declined.

4. The outline of the courses

The courses have different degrees of what one can categorize as a "flip". Some courses have an overweight of lecturing, some have less lecturing and more activities like solving assignments and group discussions in the classroom. Common for the courses is that the students have to find themes from their work place with regards to mandatory assignments.

Below is a figure that show the differences in how much lecturing and how much student activity there may be in a course. It is, however, important to note that no course consisted only of lecturing or only of student activity.

It is also important to repeat that the courses did not have any streaming video of the lectures for the students to watch. The only videos that were shown were other illustrative video clips, mostly from YouTube.
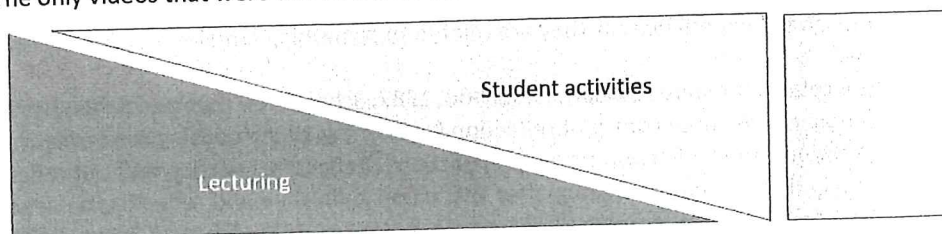

Figure 2: Overview of the courses outline

5. Results and Analysis

Here we will present the results from the inquiries. We have chosen to divide the results and analysis into four main topics; Structure of Flipped Classroom, Teacher's Facilitation, Student Input and Perceived Learning Outcome.

5.1 Structure of Flipped Classroom

The courses that practice Flipped Classroom have a dedicated area on a Learning Management System (LMS). The Inland Norway University of Applied Sciences is using Fronter as their LMS (until 1.7. 2018, when they start using Canvas). Not all lecturers produce streaming video, but they all make notes and presentations available in beforehand. The students claim it is important for the material is available in beforehand (prior to the seminars/classroom activities). Some of respondents report on not having the time to prepare well enough before the seminars. This represents a challenge with regards to utilizing "reflection before action" (Cowan, 2006; Schön, 1987) as a way of supporting the learning processes.

The activity in the classroom is also important. Organizing and facilitating for student activity during lessons can be difficult as there are many aspects to take into consideration.The respondents are somewhat divided with regards to what they prefer; mostly lectures or mostly activities. One possible explanation may lay in the students learning styles (Kolb, 1984). It is difficult to cater for all different learning styles. However, it is

possible for the lecturers to switch between lecturing and student activities differently. These findings may influence the facilitation of the different courses in such a way that they vary more in their classes regarding the mix of lecturing, student activities and discussions.

5.2 Teacher's Facilitation

The teachers that have adapted their course to being a Flipped Classroom have interpreted their facilitation in different ways, according to the students. The students report that the different approaches are acceptable as long as they themselves can remain active and utilize their backgrounds into the activities, and also draw on others' backgrounds. This is in alignment with theory on adult learning (Knowles, 1970; Knowles, 1984; Knowles, 1990). Also, Dewey (1938) advocates for utilizing the learners own background in order to facilitate for learning.

Discussing in pairs and groups are also reported as important for the learning. There are several ways of facilitating for this social interaction between students. Group work and assignments that are to be solved in pairs or groups, or even between groups, are ways that the students report on being effective ways that teachers make use of. This way of facilitating for social learning is promoted by Vygotsky (1978) when he refers to the social process being more fruitful than working and thinking on ones own. It is possible to reach ones "zone of proximal development" when cooperating, co-reflecting and co-work with others (Vygotsky, 1978).

Some teachers find it difficult to facilitate for Flipped Classroom. All adaptions can seem as time consuming and in addition to what they already do (Rose & Shevlin, 2010). The teachers may also have an issue with letting go of some of the control as they perceive this to be the same thing as loosing respect from their students (Rose & Shevlin, 2010). We have no data to support that these are the reasons for why some of the teachers do not apply Flipped Classroom-techniques, but rather give "ordinary" lectures.

5.3 Student Input

The respondents are positive towards the student activity. They all state that they were challenged with regards to bring their own work experiences into the classroom. The learning they draw from this is twofold; they get feedback on what they present, which may change the view on the experiences, and they can take part in other students' experiences and comment on them.

To utilize their own workplace with regards to the mandatory assignments are unanimously well accepted. This all the respondents are claiming contributes towards an enhanced learning outcome, as well as it being relevant for their development in their worklife.

This can be perceived as a form of co-creation process similar to what is described in Levin and Greenwood (2007) as a knowledge co-creation process. The lecturer and the students are mutually engaged and responsible for the development of the knowledge creation.

The students must also be empowered to be able to bring forward their experiences. To have and be able to apply skills in order to achieve learning outcome, and thus relevant input, will contribute to effective learning (Rose & Shevlin, 2010).

5.4 Perceived Learning Outcome

In general, the students report on high learning outcome. This is also manifested in the fact that they want more courses, more education and prioritize to show up for their different lessons.

However, one of the respondents report on it sometimes being "a lot of loose talk" that this person does not think contributes towards the common reflection processes that one can learn from. This is an important finding, as this may represent the borderline between the democratic and participative way of discussing in class and the "chit chat" that does not inspire reflection and the construction of new knowledge. This may lead to a reduced learning outcome (Kember, Jones, Loke, McKay, Sinclair, Tse, Webb, Wong, Wong & Yeung, 1999), and it can also be perceived as a break of *flow* (Csikszentmihalyi, 1990).

The majority (twelve (12) out of the thirteen (13) respondents) do, however, report on vast learning outcome from all the modules they have participated in. The active participation and the fact that they feel better

equipped to do their job after taking the different courses, suggest that the learning outcome has been to their satisfaction.

That it support them in their work also suggest that the relevance is high and that they are getting value for their time invested.

6. Conclusion

Flipping the classroom will support the learning outcome, as it is perceived as both relevant and that the students can bring their own experiences up for discussion with lecturers and peers. The feedback they receive on their experiences aids the reflection processes and contributes towards an enhanced learning outcome.

It is important to facilitate a mix and to seek to point out, reflect upon and draw learning from the experiences that the students share in order to keep this type of activity relevant for the class.

Mixing between lecturing, discussions and student activity (such as assignment and group work) will cater for most learning styles.

Utilizing their own workplaces as a basis for mandatory assignments are perceived as useful as it contributes towards learning in the workplace as well as in the courses.

6.1 Further research

Since most of other "flipped classroom" initiatives at The Inland Norway University of Applied Sciences embraces streaming video (Vold, 2014), it would be interesting to see how this could contribute towards the learning outcome. How important are streaming video with regards to the learning outcome? Will streaming video contribute towards reflection before action (Cowan, 2006) Would the videos contribute towards more student activities and reduce the use of lecturing? And how would this affect the total learning outcome from these courses?

New courses are being developed and the results from our investigations will be discussed in the further development.

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