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**AN INVESTIGATION OF TWO TEACHING SETTINGS;  
WORKSHOPS AND TUTORIALS, AND THEIR IMPACT  
ON LEARNING OUTCOME FOR STUDENTS  
AT UNIVERSITY LEVEL**

**Extended abstract**

**Introduction**

At Aarhus University the focus is to maintain an elite education standard while handling financial restriction (Schlichter et. al, 2016). In the university course «Business Development with Information Systems» there are two different teaching settings: Workshop and Tutorial, that are supposed to provide hands-on practice with the theory presented to the students in the curriculum and at lectures.

The purpose of this article is to improve the process of teaching at university level, where teaching is understood as a specific type of business process. The key findings must support efficiency through creating greater output by less input from a business process management point of view. This article focuses on the course «Business Development with Information systems» (BDIS) and draws insights to improvements within BDIS' two teaching settings (Volmar, et al., 2017).

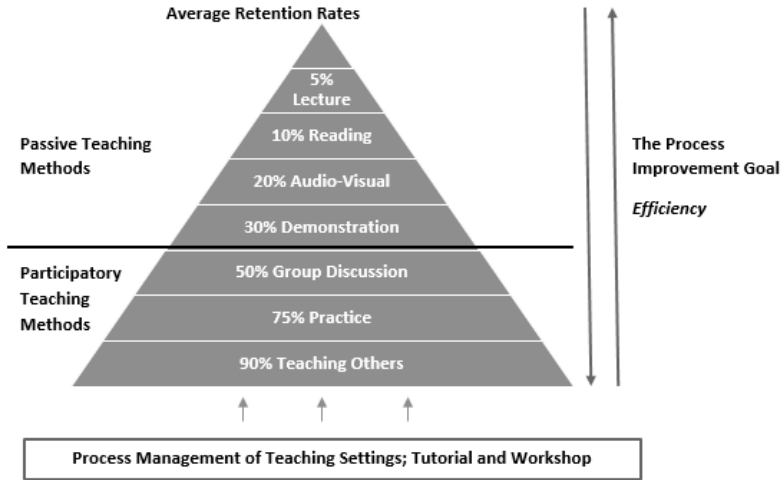
**Theory**

This article applies theory to a practical case and provide suggestions to improve the process of teaching. Business process management is the framing theory used in order to reach the business process improvement goal; efficiency (Belangér et. Al, 2016). In order to obtain efficiency, the theory «The cone of experience» by Edgar Dale (1960s) is applied. This theory analyses the student participation and learning outcome. The theory proposes that participation and engagement from the student equals a higher level of learning (Lalley et. Al, 2007).

Reengineering of processes may involve changing the way tasks are performed. Throughout the article, tasks refer to the learning activities. Optimising the learning outcome is related to maximizing the retention rate of the students, which can be obtained by working downward in «The experience cone» (Edgar Dale, 1960s).

To illustrate how the article worked the combination of BPM and the experience cone to determine and improve the learning outcome, we developed the following model:

## *A model of learning outcome based on BPM and teaching activities*



*Figure 1. The Framing Theory (Volmar, et al., 2017)*

### **Methodology**

In this research a qualitative research design is applied on BDIS as the case study. A case study facilitates the research to investigate the research questions with deep insights (Bryman & Bell, 2015). Data for analysis is collected from three micro interviews with four students and one student teaching assistant. Every participant has been involved in the course during the autumn semester 2016 (Volmar, et al., 2017).

The students were asked to reflect upon their own participation and outcome of the workshops and the tutorials, and comparing these two settings upon each other. The student teaching assistant were asked to reflect upon the personal and professional experience of the two teaching settings, and if the students' learning outcome was significantly different and/ or expected from the goals of the course (Volmar, et al., 2017).

The interview participants answered the semi-structured interview guide orally and the interviews were kept within a timeframe of 30 minutes. The interviews took offset in the following questions:

- How did you (the students) prepare for the workshop compared to the tutorial, and which learning process was most significant for you?
- How can the learning processes be improved to ensure high quality education? (Volmar, et al., 2017)

Grounded theory (Miles & Huberman, 1994) is applied as the technique for coding the data. Based on the grounded theory approach, the three interviews are coded openly to identify tendencies for the authors to suggest findings in this field of teaching. The coding resulted in seven codes (Table 1).

Table 1.

## Empirical basis (Volmar, et al., 2017)

Code	Name	Amount of appearance
A	Hand-in deadline had no effect on participation	3
B	Perception of participation is different between the students and the student teacher assistants.	3
C	A finished product had no significant influence on the participation	2
D	Preparation of the contents of deliverable had a positive influence on how participatory you were.	6
E	Preparation for the subject and theory had an influence. (Questions of quality supplies answers of quality)	6
F	Motivation has an impact on participation	10
G	STA's preparing the students before workshop had an influence on the students' perception of the outcome workshop	4

### Conclusion

The codes presented above was analysed and discussed. It was found that a high level of learning outcome was correlated to a high level of participation in tutorials and workshops, according to Edgar Dale's theory about retention. This would be as a result of the students preparing on theory before attending a class. Trying to prepare for the deliverable as well, which is the case related assignment prior to the tutorial classes, would result in an even greater outcome. They did not need to solve the assignment completely but give it a try (Volmar, et al., 2017).

The analysis also found that preparation and participation only happened when the students were motivated. Guidance during the preparation of the case or theory would be of great significance, for the students to feel motivated. This made them feel that their work was effective and efficient, because their work would turn out to be wrong and therefore a waste. At workshops the students get guidance during the work, where as in the tutorial classes, this would not always be the case (Volmar, et al., 2017).

### Key suggestions

Following constraints and assumptions was considered, before finding key suggestions for reengineering of the teaching processes.

It is not possible to provide more tutorials and/or workshops, than students already receive based on the resources committed to the course. The suggestions are based on differences observed between workshops and tutorials. The outcome of tutorials and workshops are dependent on each other, as the tutorials prepare students for workshops (Volmar, et al., 2017).

The suggestions may be incremental or radical changes, according to a business process management perspective. It would be a radical change would be to change the combination or number of workshops and tutorials. This would be applied if the research found evidence that one of these settings were more effective in creating a greater learning outcome from the course BDIS. As was concluded, the article did not

found evidence that one setting was more efficient than the other. The article found evidence in suggesting an incremental change in the structure of the tutorials rather. This could be by giving the students more guidance while working on their deliverables, just as the workshop setting provides, as guidance creates more motivation and therefore more preparation and participation (Volmar, et al., 2017).

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