

Ensuring Effective Flexible Learning through Blended Learning

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ABSTRACT

This paper discusses how Flexible Learning can be implemented through blended learning at the teacher trainer college of the University of Applied Sciences, Utrecht, Netherlands. To ensure quality blended learning programmes, it is essential that teachers developing blended learning courses are trained, particularly in relation to applied methodology. To understand how best to implement blended learning at the teacher trainer college extensive research was carried out, the findings of which were made available to the University's teachers in the form of a content-based, yet hands-on blended training programme with TPACK as its exit point. The student results showed a marked improvement when following a blended learning course developed by teachers who were trained in the programme as compared to blended learning courses developed by non-trained teachers. In addition, the results of the blended courses (which were developed by trained teachers) showed a vast improvement of the non-blended courses, it's so called 'regular' variant.

Keywords: Tpack, blended learning, teacher-training programme

RESEARCH QUESTION: How can how can Blended Learning be implemented at the teacher trainer college of the University of Applied Sciences?

1. INTRODUCTION

In September of 2013 the University of Applied Sciences, Utrecht, Netherlands started a pilot in blended learning for a select group of students in a remote area in the Netherlands. The pilot turned out to be promising enough to continue, but did not reap the anticipated success. Following the rather disappointing results, the researchers undertook an extensive study into blended learning. Both had read the promising reports on blended learning and were determined that the said University would be successful as well. Seeking a practical approach to implementing blended learning, it was decided to carry out a Design Research.

2. DESIGN RESEARCH – THEORETICAL FRAMEWORK

The research undertaken was Design Research, specifically focused on the essential criteria needed to create a successful blended learning course. One of the criteria laid down by the University was to implement her philosophy of Social Constructivism – whereby, inter alia, students learn in teams of four students with and from each other in a social context, giving ample room for collaboration within these rather autonomous learning teams.

Embarking on the literary part of this research several theories and models were studied, using TPACK as a starting point. Among others, the model of R2D2 (Bonk, C. & K. Zhang, 2008) [2], PIM (Rosenberg M.J., 2005 [4]), as well as the Pull Technique (Thorne, K.T & K.B. Thorne, 2002) [5] were of particular interest. However, whilst these models, among others, were interesting in shaping the methodology of blended learning, they explained little about learning styles, online structuring, multiple intelligences, modal learning, online coaching, forum coaching, f2f coaching, presenting material online, using online tools to carry out activities, the role of both formative and summative testing, and online collaboration. From initial research (inter alia, Brunzell, Eric. (2012) [1], Garrison D.R. & Vaughan N.D. (2007) [3], it became obvious that these were essential elements for a blended course to be successful. In continuing this research several criteria were marked to be of essence in a successful blended learning course, and which have been incorporated in the training course for teachers accordingly, namely: setting learning goals, applying detailed structure, being highly descriptive in online instructions and assignments, simplifying navigation through the course, appropriate methodology – for which a combination of the several methodological models, including the ones mentioned above, was made; variation of presenting online material; catering for a large number of learning styles; providing a clear distinction between online and f2f activities; catering to the different models of blended learning; integrating, inter alia, Bloom's Taxonomy (Rankine, Lynnae, Gina Saliba & Hermy Cortez, 2012) [6]; and online and offline coaching.

Since it was the wish of the University to have its entire curriculum available in a blended format – roughly 600

courses – it was decided to assemble the findings into a training course for teachers, a course which is currently being marketed outside of the Netherlands as well. The training course is the result of the Design Research whereby the most essential elements for designing a blended learning course have been implemented. These elements, which are incorporated in the training programme, include, inter alia, learning goals, applying structure to the course, limiting excessive navigation, how to present online material, how to select and incorporate webtools, how to cater for different learning styles, how to successfully design assignments that correspond to the chosen strategies of blended learning methodology, and how to coach forums and learning communities. Teachers work in learning communities on the assignments, which are geared towards creating their own blended learning course. By the time the teachers have finished the training course, most of their own blended learning course will have been developed.

It seemed desirable that the teacher-training programme should be constructed in a manner through which three levels of learning is achieved: content-based learning, experience-based learning and following-from-example. This meant that the course had to provide sufficient content to equip the teachers, that the course itself had to be an excellent example of a good blended learning course, and that the teachers had to be placed in learning teams in order to experience what their students would experience following the Social Constructivist philosophy that the University supports.

3. EMPIRICAL RESEARCH

Whilst teacher evaluations were positive and showed that the teacher training course was considered to be highly informative yet practical, it was essential to find out whether or not the training would actually result in quality blended courses in such a way that students' results, findings, and so on would improve. To discover whether or not the training course had yielded improvements, empirical research was carried out. This research covered three main questions: 1. How do the student results of the blended course compare to the student results of the course in its regular format, 2. What were the student results of a blended course created by a teacher who was trained in the programme, and 3. What were the student results of a blended course created by a teacher who was not trained in the programme (and how do 2 and 3 compare?). The term 'student results' include, inter alia, the test results, the student findings in relation to methodology used, student findings in relation to coaching, and student findings in relation to the use of the online environment.

4. TRIANGULATION

Applying triangulation, the student results of blended courses and of its regular sister course were evaluated twenty in an effort to compare the results. Accordingly, a survey was carried out among the students in order to establish their findings, focusing on their overall findings of the course, including, inter alia, the use of the online environment, tools and applied methodology, as well as the actual test results of the students themselves. Additionally interviews with teachers who had been trained in the blended learning training programme were held, as well as evaluating both the results of their blended course and its regular sister course in order to draw objective comparisons. Lastly interviews were carried out with teachers who had taught their blended learning course for the second time, having been able to follow the training programme before the onset of their course.

5. RESULTS

Course quality in relation to student results.

Forty-five courses were compared, all of which showed similar outcomes to the two courses discussed here: a course from the English curriculum and one from the Dutch curriculum. In addition, all courses themselves were compared to their regular variant. The first course shown in Figure 1 is from the English curriculum, 'Highlights of English literature'. This teacher had not followed the training programme when designing her blended course. The results show that students' average ('gemiddeld') in the regular ('regulier') version had one tenth a higher grade than the blended version.

| Highlights of English Literature | Average | SD* | N | P-value |
|----------------------------------|---------|------|----|---------|
| Regular | 7,5 | 0,70 | 23 | 0,6927 |
| Blended | 7,4 | 0,75 | 7 | |

| Oral skills | Average | SD* | N | P-Value** |
|-------------|---------|------|----|-----------|
| Regular | 7,2 | 0,64 | 11 | 0,00004 |
| Blended | 8,6 | 0,56 | 17 | |

Figure 1

The course from the Dutch curriculum in Figure 1 (Oral Skills), however, was a blended course by a teacher who had followed the training programme. The difference between the blended version and its regular format show a marked difference in students' average. In the regular version students had an average of 7,2, whereas in the blended version students had an average of 8,6.

These results show that not only can a blended learning course show more promising results than a course taught in the traditional way, it also shows that such a success is only guaranteed once the criteria for blended learning are met and are reflected in a sufficient quality blended learning course.

Student findings The examples given are just two examples of the forty-five results that we have obtained, but are not shown here due to the allowed limit of words.

The results of the first course that was looked at, from the English curriculum developed by the teacher who had not followed the training programme, are highly dissatisfactory in comparison to the course from the Dutch training programme, Oral Skills, made by the teacher who had followed the training programme. In order to assess the student findings on the parameters the same courses were taken in order to draw comparisons between a course developed by a teacher not trained in the blended learning training programme and a trained teacher. In general students found courses that were developed by trained teachers to be more structured. The general complaint students had from courses designed by untrained teachers was that "things were hard to find", things were "difficult to understand", it was "hard to understand what they had to do in teams and why they had to work in teams". In addition students found "teacher-coaching, online coaching and face-2-face coaching to be dissatisfactory", presentation of study material "to be unclear and not in relation to the level to be acquired", and "online assignments were not in relation to the test criteria and learning objectives". Their general opinion was "the course was demotivating and not educating".

Teacher Evaluations From the various interviews held it became evident that teachers who had followed the training programme felt more confident and inspired, but perhaps most important: they were able to allocate their time sufficiently, structuring their online time whilst being more effective in both online presence and feedback as well as offline coaching.

6. CONCLUSION

The examples shown above are two examples out of many similar results when comparing blended learning courses created by trained teachers and by untrained

teachers. In total we have evaluated 45 courses. It appears that whilst teachers may be highly motivated to develop a course and put a lot of effort into doing so, without training it cannot be guaranteed that all essential criteria of developing a blended learning course are met. Conflicting reports about the success or failure of blended learning may well lie in exactly this point: for a blended learning course to be considered successful it is essential that blended learning criteria are met and that teachers are trained before embarking on the development of their course.

7. LIMITATIONS OF PAPER

At the time of writing this research is still on-going. In the example above, the teacher who was formally not trained is now trained. The newly developed course as a result of this training has just been taught, and from the studying the first results a vast improvement becomes apparent. While this appears promising, it is perhaps too soon to draw conclusions based on the results thus far. More extensive research, one which includes, inter alia, time spent on coaching by the teacher, needs to be carried out in order to draw unbiased conclusions.

8. RECOMMENDATIONS

Before embarking on developing courses in the blended programme we highly advise teachers/developers be properly trained. On request, our training programme can be made available to Universities and other Educational Institutes.

9. REFERENCES

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