Digital Collaboration in Higher Education: Hype or Guarantee for Better Learning?

Completed Research

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Abstract

Higher education has increasingly implemented blended learning tools as supplements to traditional learning. Their aim is to foster collaboration, knowledge exchange and self-directed learning. Blog usage promises to enhance the shift from instruction-based to student-centered learning as promoted by the constructivist learning theory. Prior research has paid little attention to exploring whether blog usage actually increases learners’ performance. Thus, we investigate performance related differences between blog and non-blog users. By analyzing the influence of motivation, learning style, and creativity on non-survey performance data of 42 non-blog users as well as 57 blog users, and by furthermore conducting qualitative interviews, our research provides an in-depth understanding of the usefulness and applicability of blog usage. Despite finding evidence for the potential of blogs to increase students’ performance, the results do not show significant differences between non-blog and blog users. Our findings yield important theoretical and practical implications on how to successfully implement blogs.

Keywords


Introduction

New learning technologies become increasingly important in higher education as they promise to foster communication, collaboration, and knowledge exchange among students (Briz-Ponce et al. 2017; Greenhow and Lewin 2016; Hamid et al. 2015). Blended learning combines traditional face-to-face learning with online technologies. This approach is becoming more and more useful in supplementing traditional methods and has led to improved learning processes and performance outcomes (Garrison and Kanuka 2004; Poon 2013). A particularly promising approach to blended learning is the use of blogs (Oravec 2003).

Blogs are websites that allow learners to write, read, and collect data as well as to share information with lecturers and peers (Lee and Bonk 2016). As blogs are easy to create, cost effective, and require little technical skills, they are increasingly implemented in the field of education (Yang 2009). Blogs can foster continuous and self-directed learning (Du and Wagner 2005) that in turn improves students’ overall learning experience (Sim and Hew 2010).

Blogs promise to enhance the shift from instruction-based learning to student-centered learning as promoted by the constructivism learning theory (Du and Wagner 2005; Leidner and Jarvenpaa 1995).
According to the theory (Bruner 1960; Piaget 1928; Vygotsky 1978) students’ learning processes have a greater effect when they are able to construct and create content by themselves instead of only being instructed. As blogs foster self-directed as well as problem-centered learning (Du and Wagner 2005), and enhance social exchange as well as interaction among the participants (Blau 2009; Lee and Bonk 2016), they are in line with the premises of the constructivist learning theory.

So far, the influence of blogs on users’ performance remains unclear for three reasons: First, most research examines the impact of blogs on performance by solely relying on self-reported performance data, thus only providing information on the students’ personal perception regarding potential changes in their learning outcomes (Brescia and Miller, 2006). Second, while the research generally identifies a positive effect of blog usage, the majority of prior studies do not include a reference group of non-users, thus making it hard to interpret the de facto effect of blog usage (Williams and Jacobs 2004; Ellison and Wu 2008). Third, whereas studies have focused on the perception of the technological characteristics of blogs and their influence on blog participants’ behavior (Sim and Hew 2010; Liao, To and Liu 2013), the extent to which personal characteristics such as motivation, learning style, or creativity promote or hinder the successful usage of blogs remains unclear. However, this is of crucial importance as the successful implementation and adoption of technology depends largely on personal characteristics (Giermindl et al. 2017).

This study looks to overcome the previously identified shortcomings, to assess the usefulness of integrating blogs within traditional learning settings, and to determine expedient areas of application. Therefore, we seek to answer the following research questions:

1. Does the use of blogs increase students’ performance?
2. Do personal characteristics affect successful blog usage?

Based on the constructivist learning theory, we investigate the supplemental use of blogs in a blended learning environment by focusing on students’ characteristics and their respective differences with non-users. Furthermore, this study provides non-survey performance data on the participants as well as their learning outcomes that thus allows for an objective examination of the success of blog usage. Beyond the quantitative approach, we conduct post hoc interviews with blog users in order to facilitate an in-depth understanding of the usefulness of blogs as well as possible areas of application.

Our research makes several theoretical and practical contributions: By comparing users and non-users, we are among the first to test the usage of blogs on non-survey performance data in a quasi-experimental design. Furthermore, we focus on various personal characteristics rather than solely on technological design features in order to provide a user-centered approach of blog usage on performance. Additionally, we use non-survey performance measures. Thus, we shed light on the question of whether the usage of blogs actually makes a difference. Moreover, we derive applicable recommendations for practitioners that provide novel insights on the usefulness and value of blog usage in higher education.

Theoretical Background

Blogs are promising yet affordable tools for higher educational institutions to improve learning processes, as blogs enable simple and fast content creation, and require little technical skills of users (Du and Wagner 2005; Yang 2009). Moreover, blogs allow users to post comments, graphics, and videos that enables a high degree of visible interaction between users. Thereby, blogs offer learners a medium to share opinions, thoughts, and reflections on learning contents as well as to connect and collaborate with each other (Kuo et al. 2017; Lee and Bonk 2016). Considering the diverse potentials of blogs to foster intellectual exchange (Williams and Jacobs 2004) and critical as well as reflective thinking (Hsu 2007), blogs promise to overcome the shortcomings of instruction-based learning and teaching methods (Ellison and Wu 2008). Thus, blogs offer the potential to contribute to a shift to student-centered learning as promoted by the widely regarded constructivist learning theory.

Constructivist Learning Theory

The constructivist learning theory (Bruner 1960; Piaget 1928; Vygotsky 1978) promotes a transition from instruction-based to student-centered learning (Du and Wagner 2005; Leidner and Jarvenpaa 1995) that includes three major perspectives: (1) individual, (2) collaborative, and (3) cognitive constructivism. The
initial individualistic perspective assumes that knowledge is not transmitted but created individually by each student (Jonassen 1994). Thus, constructivism encourages lecturers to compel students to experience, discover, and create learning contents (Leidner and Jarvenpaa 1995). Blogs promise to promote this student-centered perspective in two major ways: First, blog usage fosters active knowledge creation as blogs require students to analyze and interpret knowledge (Du and Wagner 2005). Second, blog usage demands that students work and think in a more autonomous way as knowledge is not solely transmitted but acquired by and reflected on by the students themselves (Robertson 2011).

However, constructivism does not only consider the individualistic perspective of learning, but was extended by collaborative and cognitive aspects of learning (Du and Wagner 2005; Hsueh-Jui Liu and Yu-Ju 2016). Collaboration assumes that learning emerges by creating knowledge in collaboration with other students via a shared understanding of the learned content (Leidner and Jarvenpaa 1995). As blogs involve a high degree of interaction and collaboration (Chhabra and Sharma 2013; Lee and Bonk 2016), they can enhance collaborative learning. Cognition considers the cognitive aspects that occur in learning processes (Leidner and Jarvenpaa 1995). New knowledge has to be processed and transferred into long-term memory in order to achieve retention and transferability to new problem-solving situations (Leidner and Jarvenpaa 1995; Shuell 1986). As blogs usually involve continuous work on reflective tasks, they can enhance cognitive learning.

Blog Usage, Performance, and Personal Characteristics

Prior research has mainly investigated the influence of the students’ perception of technological design features on blog users’ behavior (Sim and Hew 2010). In order to assess the usefulness of integrating blogs within traditional learning settings as well as to determine the expedient areas of application, an examination of whether and how personal characteristics affect the successful usage of blogs is crucial. Therefore, this study examines three major personal characteristics—motivation, learning style, and creativity—regarding their influence on successful learning with blogs.

Motivation directly influences attitudes and learning behaviors (Ryan and Deci 2000). Thus, motivation can in turn affect users’ learning outcomes (Elliott and Dweck 1988; Ryan and Deci 2000). Intrinsic motivation refers to individuals who are: (1) autonomous and show self-directed learning; (2) prefer the lasting development of competencies and abilities; and (3) easily relate to others, such as colleagues or peers (Pintrich 2003). In contrast, extrinsic motivation refers to an activity that is motivated by separable outcomes (Ryan and Deci 2000) such as rewards, punishments, or other external triggers. We posit that intrinsic motivation will have a positive effect on blog usage for numerous reasons: First, blog usage is characterized by a high degree of autonomous and self-directed learning (Du and Wagner 2005; Robertson 2011). Second, blog usage focuses on the development of competencies and abilities such as critical thinking (Ellison and Wu 2008; Hsu 2007). Third, blog usage involves interaction and collaboration with peers (Blau 2009; Lee and Bonk 2016). Consequently, we argue that intrinsic motivation promotes the successful usage of blogs:

H1: Intrinsic motivation promotes a positive relationship between blog usage and performance.

Learning styles specify the preferred way to approach a student’s learning and are vital characteristics in the educational context regarding students’ performance outcomes (McLoughlin 1999). The learning style by Felder and Silverman (1988) contains the two dimensions of active and reflective students, where active students tend to be experimental and practical, while reflective students prefer to think things through and work on their own (Felder and Silverman 1988). Thus, we assume an active learning style to promote successful blog usage for two reasons: First, blog usage involves working, interacting, and collaborating with peers. Second, blog usage requires users who actively create blog posts and comments. Therefore, we argue that an active learning style promotes successful blog usage:

H2: An active learning style promotes a positive relationship between blog usage and performance.

Creativity as a combination of both originality and effectiveness of ideas (Runco and Jaeger 2012) fosters identifying problems, generating novel solutions, and ensuring innovativeness (Im and Workman 2004;
Blog usage includes a high degree of creative freedom as blogs allow users to add videos, photos, links to their posts, and to create innovative content (Deng and Yuen 2011). Furthermore, blog usage comprises content creation based on critical and reflective thinking (Du and Wagner 2005; Robertson 2011). Therefore, we argue that creativity promotes successful blog usage:

H3: The students’ creativity promotes a positive relationship between blog usage and performance.

Method

We compared two groups of users over the course of seven weeks. Two classes, one with business undergraduate (non-blog users) and one with graduate (blog users) students took part in a traditional human resources course. Both groups had to complete additional assignments during the course. For the non-blog users, the additional assignment involved written tasks about course-related topics both individually and collaboratively on a weekly basis. The blog users had to write assignments about course-related topics but had to collaborate via their blogs. Overall, the additional tasks were assigned to generate a deeper understanding and to establish the practical relevance of the presented content of the lecturer. We formulated the assignments as open statements or questions that students had to collectively discuss, such as: “How does digital transformation change existing tasks?” or “What are the opportunities and risks of social networks for companies and employees?”. At the end of the course, both groups had to take an exam for their final grade.

While possible differences between undergraduate and graduate students may exist, we controlled for different influencing factors in order to account for external differences between both groups other than the use or non-use of the blogs. First, both tasks were embedded in a classical human resource management context and did not require any previous knowledge. In addition, the requirement profiles in both tasks were approximately the same. Moreover, we checked for socio-demographic differences between the two groups. We therefore assumed that the external differences between the two groups were neither smaller nor larger than if we compared two graduate to two undergraduate groups.

We distributed the questionnaire on personal characteristics equally between the two groups in order to collect data. Participation in the survey was voluntary and respondents received no compensation. The survey was distributed among \(N = 83\) course participants in the non-blog task and among \(N = 81\) participants in the blog task. Overall, \(N = 42\) of the non-blog users and \(N = 57\) of the blog users participated in the survey that resulted in a response rate of 50.60 % and 70.37 %. In the group of non-blog users 19.00 % of respondents were male whereas in the group of blog users 68.40 % were female. On average, non-blog users were 23 years old (\(M = 22.78, SD = 2.32\)) and blog users were 25 years old (\(M = 24.79, SD = 4.49\)).

Measures

The independent variable is blog usage because it reflects the two groups of non-blog users and blog users (with 1 = *Blog User* and 2 = *Non-Blog User*). The students’ final exam grade is used as the non-survey performance indicator (with grades ranging from 1.0 = very good to 5.0 = failed). Moreover, we use the three chosen personal characteristics (motivation, learning style, and creativity) as moderators in order to examine their effect on successful blog usage.

To measure motivation, we use a shortened version of the academic motivation scale (Vallerand et al. 1992) that consists of 12 items with four items for each of the intrinsic motivation subscales: *Intrinsic motivation to accomplish things*, *intrinsic motivation to know*, and *intrinsic motivation to experience stimulation*. Respondents rated their answers on a five-point Likert scale ranging from 1 = disagree strongly to 5 = strongly agree. Regarding the learning style, we use the Index of Learning Styles (Felder and Silverman 1988) with 11 binary items focusing on an Activist-Reflector-Dimension. Furthermore, we assess creativity with the Gough’s Creative Personality Scale (Gough 1979). The scale includes 30 items that represent binary trait adjectives related to creativity.

Qualitative Data Collection and Analysis

In order to enhance our understanding of the results, we supplement the quantitative approach with five qualitative in-depth post hoc interviews. Four of the interviewees were female. On average, participants
were 22 years old ($M = 22.40, SD = 1.51$). We used semi-structured interviews to gain deeper insights into blog users’ opinions and experiences of working and learning with blogs. We conducted the interviews face-to-face, and each interview lasted about 25 minutes. We coded the interviews by using MAXQDA 18. First, we focused on gaining an overview of the interviewees’ statements by using open coding. Then, we performed the deductive category assignment method, as proposed by Mayring (2015). The overall aim was to generate a deeper understanding of the underlying processes that influence the students’ perception of blog usage.

### Quantitative Findings

In the first step, we examine the differences between non-blog users and blog users regarding their exam grade as well as their personal characteristics. As Table 1 shows, non-blog users and blog users did not differ in their performance. Regarding the users’ personal characteristics, non-blog users ($M = 3.59, SD = 0.75$) and blog users ($M = 4.02, SD = 0.44$) only differed significantly in their $Intrinsic Motivation to Know$ ($t(73.64) = 4.09, p < .01$) that indicates blog users are more motivated to acquire new knowledge than non-blog users.

<table>
<thead>
<tr>
<th></th>
<th>Non-Blog Users</th>
<th>Blog Users</th>
<th>$t$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>2.81 (0.81)</td>
<td>2.72 (0.83)</td>
<td>-0.54</td>
<td>97</td>
</tr>
<tr>
<td>IM - A</td>
<td>3.04 (0.70)</td>
<td>3.29 (0.64)</td>
<td>1.91</td>
<td>97</td>
</tr>
<tr>
<td>IM - K</td>
<td>3.59 (0.57)</td>
<td>4.02 (0.44)</td>
<td>4.09**</td>
<td>73.64</td>
</tr>
<tr>
<td>IM - E</td>
<td>2.60 (0.63)</td>
<td>2.84 (0.68)</td>
<td>1.81</td>
<td>97</td>
</tr>
<tr>
<td>A/R-LS</td>
<td>1.67 (4.18)</td>
<td>2.12 (4.31)</td>
<td>0.53</td>
<td>97</td>
</tr>
<tr>
<td>Creativity</td>
<td>2.95 (3.71)</td>
<td>3.56 (3.12)</td>
<td>0.89</td>
<td>97</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05, **p** < .01. Standard deviations appear in parentheses next to the means. IM - A = Intrinsic Motivation to Accomplish Things; IM - K = Intrinsic Motivation to Know; IM - E = Intrinsic Motivation to Experience Stimulation; A/R-LS = Activist / Reflector Learning Style.

**Table 1. Differences for Groups of Non-Blog Users and Blog Users regarding Exam Grade and Personal Characteristics**

In the second step, we compute a multiple regression in order to further analyze the influence of blog usage on students’ academic performance as well as the moderating impact of personal characteristics. First, we regress Blog Usage on performance with age and gender as control variables. Sequentially, for each of the five moderating variables, we compute individual models with blog usage as the independent variable, performance as the dependent variable, and each of the single influencing variables as moderators (Model 2 to 6). None of the influencing variables are significant except $intrinsic motivation to accomplish things$, as Table 2 shows.

### Qualitative Findings

Overall, we derive four main categories from the interviews: (1) Benefits of Blog Usage refers to interviewees’ general perception of positive aspects to using blogs; (2) Disadvantages of Blog Usage relates to interviewees’ general perception of negative aspects of using blogs; (3) Blog Usage and Performance refers to the first research question that asks if blog usage increases students’ performance; and (4) Blog Usage and Personal Characteristics relates to the three hypotheses as well as to the second research question and asks whether and how personal characteristics affect the successful usage of blogs.

**Benefits and Disadvantages of Blog Usage**

We find two main categories—Benefits of Blog Usage and Disadvantages of Blog Usage—that provide insights into students’ perceived benefits as well as the disadvantages of using blogs. Interviewees expressed...
### Table 2. Results of the Multiple Regression Analysis on Users’ Performance

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<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
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<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>SE</td>
<td>$\beta$</td>
<td>$b$</td>
<td>SE</td>
<td>$\beta$</td>
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<tr>
<td>BU</td>
<td>0.16</td>
<td>0.17</td>
<td>0.10</td>
<td>-1.48</td>
<td>0.80</td>
<td>-0.89</td>
</tr>
<tr>
<td>Age</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Gender</td>
<td>0.50</td>
<td>0.19</td>
<td>0.27</td>
<td>0.44*</td>
<td>0.19</td>
<td>0.24</td>
</tr>
<tr>
<td>IM - A</td>
<td></td>
<td></td>
<td></td>
<td>-0.80*</td>
<td>0.38</td>
<td>-0.66</td>
</tr>
<tr>
<td>BU x IM - A</td>
<td></td>
<td></td>
<td></td>
<td>0.52*</td>
<td>0.25</td>
<td>1.08</td>
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<tr>
<td>IM - K</td>
<td></td>
<td></td>
<td></td>
<td>-0.12</td>
<td>0.56</td>
<td>-0.08</td>
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<tr>
<td>BU x IM - K</td>
<td></td>
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<td>0.19</td>
<td>0.34</td>
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<td>IM - E</td>
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<tr>
<td>BU x IM - E</td>
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<td></td>
<td></td>
<td>0.30</td>
<td>0.27</td>
<td>0.54</td>
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<tr>
<td>AR - LS</td>
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<tr>
<td>BU x A/R - LS</td>
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<tr>
<td>Creativity</td>
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<tr>
<td>BU x Creativity</td>
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</tr>
<tr>
<td>R2</td>
<td>0.07</td>
<td>0.12</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>adj. R2</td>
<td>0.04</td>
<td>0.07</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
</tr>
</tbody>
</table>

$F_{(df1, df2)} = F_{(3, 94)} = 2.49 \quad F_{(5, 92)} = 2.43^* \quad F_{(5, 92)} = 1.75 \quad F_{(5, 92)} = 1.76 \quad F_{(5, 92)} = 1.60 \quad F_{(5, 92)} = 1.86$

*Note. * $p < .05$, **$p < .01$. BU = Blog Usage; IM - A = Intrinsic Motivation to Accomplish Things; IM - K = Intrinsic Motivation to Know; IM - E = Intrinsic Motivation to Experience Stimulation; A/R - LS = Activist / Reflector Learning Style.
that the use of blogs enhanced their writing of scientific posts and comments while only requiring little technological skill. Furthermore, students praised the option to individualize the presented content and their profiles while also being creative.

*I think it was interesting as it was something completely new compared to other classes, [...] the online blog was simply a variety to all of this face-to-face teaching, because it wasn’t solely a lecture like other classes, and it was just cool to make some experiences with these blogs.* (I 5)

Regarding the disadvantage, students perceived a higher workload, as blog usage is very time consuming compared to traditional lectures. Creating weekly posts and comments took extra effort, which was considered as negative by the majority of the interviewees.

*Yes [...] due to the extra effort it was a bit of, yes, an added burden which you usually don’t have in classes where you just have an exam and that’s it [...].* (I 4)

**Blog Usage and Performance**

This category aims at shedding light on aspects of blog usage that enhance or hinder successful learning with blogs and in turn affect students’ academic performance. Three subcategories emerged from the interviews: (1) **Individual Learning**, (2) **Collaborative Learning**, and (3) **Cognitive Learning**.

**Individual Learning** refers to the individualistic dimension of constructivism and emphasizes blogs’ potential to enhance individual learning processes. Interviewees found that blogs promote active knowledge creation and self-directed learning as students had to do research on their own, gain information from various sources, read peers’ posts and comments, and draw their own conclusions.

* [...] and this is why you didn’t just memorize learning contents empty-headed, but you constructed your own thoughts and you drew your own conclusions.* (I 1)

**Collaborative Learning** emphasizes blogs’ potential to enhance collaboration and interaction among students. Interviewees found that blog usage involved a high degree of engagement and participation as blogs provided the opportunity to directly comment on peers’ posts and ideas. Moreover, blogs provided an uncomplicated platform to share and to exchange knowledge.

* [...] actually it was a bit like a learning group, just online via the blog.* (I 5)

**Cognitive Learning** underlines the blogs’ potential to foster cognitive processes that are vital for successful learning. Interviewees found that blog usage promoted in-depth and continuous learning because students had to search for information on various platforms, constantly develop new ideas for their blog posts, and discuss or justify their posts to peers:

*Well, they [blogs] influenced the learning process in that way that [...] you were forced to deal with the topics already during the semester instead of defer everything.*

Nonetheless, interviewees perceived a mismatch between the blogs’ thematic focus and the content of the final exam.

* [...] in my opinion it had been two separate things, we had the blogs and the blog posts and then the exam [...].* (I 2)

**Blog Usage and Personal Characteristics**

This category aims at shedding light on the question of whether and how personal characteristics affect the successful use of blogs. Two subcategories emerged through the coding process: (1) **Required Characteristics** and (2) **Promoted Characteristics**.

**Required Characteristics** refer to personal characteristics that interviewees considered as crucial to successfully using blogs, such as a high degree of self-directed motivation in order to accomplish the weekly workload as well as the ability to organize oneself and to be self-directed in work.

*Well, I think it requires a certain degree of autonomy and definitely motivation to learn.* (I 1)
Furthermore, blogs tend to promote certain characteristics such as independent thinking or creativity, as using blogs requires critical reflection on learning contents, drawing conclusions, and acquiring knowledge.

 [...] and thus you made an own contribution and that independent thinking was promoted is also something I liked [...]. (I1)

Discussion

The purpose of this study is twofold. First, we examine whether blog usage increases students’ academic performance. Second, we investigate how personal characteristics affect this relationship. In order to assess our first research question, we hypothesized a positive relationship between blog usage and performance. Both, our quantitative and our qualitative results indicate no relationship between blog usage and students' performance. Nonetheless, our interviewees reinforced the assumption that blog usage does contribute to a shift from instruction-focused to student-centered learning as blogs usage enhances (1) individual, (2) collaborative, and (3) cognitive learning. Thus, regarding our first research question, we find that although blog usage does not promote exam-focused learning, the usage of blogs enhances the long-lasting effect of learning (Du and Wagner 2005; Robertson 2011).

Beyond examining the impact of blog usage on students’ learning outcomes, our research furthermore focuses on the influence of personal characteristics on successful blog usage. Again, our quantitative results indicated no overall difference between blog users and non-users. Nonetheless, our interviews present contradicting evidence that indicated blog usage does involve various aspects of intrinsic motivation such as a high degree of self-directed learning (Du and Wagner 2005; Robertson 2011), critical thinking and writing (Ellison and Wu 2008; Hsu 2007) as well as interaction and collaboration among peers (Blau 2009; Lee and Bonk, 2016). Furthermore, students perceived creativity as beneficial in order to design blog layouts and to create innovative blog posts. Again, there was a contradiction between our quantitative and qualitative findings. Thus, we had to reject our three hypotheses regarding the influence of intrinsic motivation, learning style, and creativity. The general contradiction between the blogs’ influence on performance and their subjectively perceived benefit is highly relevant and needs further consideration.

Practical Recommendations

Our study shows that the implementation of blogs as supplements to traditional teaching is rewarding but challenging. In order to enhance the successful implementation of blogs, three practical recommendations can be made: First, blogs must be fully integrated into the textual context of the course. Blog usage should not be considered as an independent task or element, but as an integral lever to promote students’ success. Second, beyond a consistent thematic focus, blog related tasks must comply with the performance-related measures. Students benefit the most from engaging in this blended learning environment if they can apply their gained knowledge in respective performance-related situations. Thirdly, the use of blogs must be encouraged by all participants. The more contributors actively participate in the creation of content, the better the mutual exchange.

Limitations and Further Research

Our study has several limitations. First, the comparability of non-blog users and blog users is an issue. Although we control for age and gender, there might be additional sociodemographic discrepancies that we could not account for. Thus, regarding the differences between blog users and non-blog users, further investigations need to strengthen the validity of our results. Second, due to the research design, we are unable to derive conclusions about time-varying effects over the course of multiple semesters. Future research should therefore investigate the long-term effect of blogs on different performance indicators. Third, our research only examines the usefulness of blog usage within the context of higher education. However, to what extent blog usage might be applicable to other contexts such as business environments remains unclear. Nonetheless, the topic of blended learning environments in general and the usage of blogs as cost effective and easily adaptable technology is of special interest to the research community. Thus, we strongly encourage researchers to further investigate this challenging topic of interest.
Conclusion

To date, very few studies have examined the impact of blog usage on students’ performance. By including non-blog users as an additional group and by relying on non-survey performance data, we generate novel insights on the successful implementation of a blended learning environment. Moreover, by including measures of motivation, learning style, and creativity, our study sheds light on the usefulness of blog usage within higher education settings and focuses on personal characteristics rather than technological design features. Thus, our research makes several important contributions to the information systems literature: First, our work supports blogs’ potential to enhance student-centered learning by fostering (1) individual, (2) collaborative, and (3) cognitive learning as suggested by the constructivist learning theory. Second, we show differences in the effectiveness of blogs. Further research needs to investigate which aspects of the learning process can be encouraged and which areas are resistant to the influence of blogs.

REFERENCES


