Motivating and achievement-eliciting pop-ups in online environments: A user experience perspective

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ABSTRACT

The aim of the present research was to develop pop-up windows that motivate users and evoke a positive user experience. Several variants of achievement eliciting pop-ups were designed and tested on a real business-website. A pre-test examined the effectiveness of 24 combinations of pictures and words in eliciting achievement motivation. The strongest effects on user experience were found for pop-ups containing a congruent achievement-related picture and word. The three pop-up variants with the most positive ratings were employed in a subsequent experiment.

The main experiment tested the effects of a sequence of three pop-ups that were presented on a website. We had three conditions with different display times of the sequence of pop-ups. They were presented to 78 website-users for either 1, 2 or 3 s, and compared to a control group on subsequent motivation-related ratings. The results demonstrated that the website was stronger associated with achievement motivation if pop-ups were presented for only 1 or 2 s, compared with 3 s or the control group. This indicates that short presentations of pop-ups could activate achievement motivation in users of learning and business websites. It could be an important design guideline to flash shorter pop-ups that make online environments more appealing to users.

1. Introduction

Over the past decade, a shift has taken place from advertising in traditional media, such as print, television and radio, to online advertising. Websites have the advantage that marketers can monitor online users and learn significantly more about them (Evans, 2009). Although online advertising is a promising tool, advertisements on websites are oftentimes perceived as intrusions that disturb the online-activities of users (Diao & Sundar, 2004). Therefore, marketers aim to develop online advertisements that appeal to users and that evoke a positive user experience. Pop-up windows have the potential to be an effective communication tool in online advertising, if their design avoids reactance in users (Edwards, Li, & Lee, 2002). The present research tested whether pop-ups can have positive effects on user experience by motivating users to reach their goals. Fulfilling the needs of the user should be perceived as pleasurable (Hassenzahl et al., 2013). Therefore, we aimed to provide insights into external stimuli that may influence the motivation of website users. If the content of a pop-up is in line with the users' current goals, it should not be perceived as intrusive and, therefore, should not evoke reactance (Edwards et al., 2002).

2. The perception of pop-ups from a user experience perspective

A few studies showed that pop-up windows can be effective for online activities. For example, Bétrancourt and Bisseret (1998) found that a pop-up is likely to emphasize the presented information by increasing its visual presence. More specifically, the integration of text and pictures in this experiment led to a higher performance and a lower learning time. Another study demonstrated that pop-ups direct the users' attention toward a specific location on the computer screen, and thus increase their attention as a spotlight for information processing (Constantin, 2010). In addition, pop-ups may serve as cues that influence the user (Diao & Sundar, 2004) and, thus, pop-ups may potentially function as external stimuli, such as learning aids in online environments (Ruf & Ploetzner, 2014).

Although this reasoning sounds promising, the personal experience of the user is oftentimes a different one. For example, consumers have labeled online advertisements as senseless, uninformative, unmemorable, and ineffective (McCoy, Everard,

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Polak, & Galletta, 2007). Oftentimes, pop-ups are considered to be the most annoying type of all advertisements among online users (Diao & Sundar, 2004). Because a lot of online behaviour is goal-oriented, pop-ups are perceived as highly intrusive, as they block or frustrate the current goals of the user (Bagozzi & Dholakia, 1999). This may lead to defensive reactions, such that users ignore pop-ups and try to avoid them by installing pop-up blockers. Marketers, by contrast, aim to make pop-ups more difficult to avoid (McCoy et al., 2007). The result can be that pop-ups lead to negative attitudes and brand perceptions (Abernethy, 1991), which may in turn contribute to a low retention of website contents (McCoy et al., 2007).

The present research tested whether pop-ups that appear for a few seconds in the middle of a website and then disappear by themselves could transfer motivating information to the user. If the contents of a pop-up evoke a positive user experience, this type of pop-up should not interrupt the user. It would not block ongoing online-activities by forcing the user to close it (Brajnik & Gabrielli, 2010; Chatterjee, 2008), but would give a motivating message that may increase goal pursuit.

2.1. User experience

Researchers and practitioners are typically looking for methods that evoke pleasurable experiences in users interacting with technology (Hassenzahl, Diefenbach, & Göritz, 2010; Hassenzahl & Tractinsky, 2006). The evaluation of user experience focuses on the positive aspects of interactive technology; starting from products with their associated problems, to humans and their positive or negative feelings (Hassenzahl, 2008). There is, however, a lack of empirical research on user experience with regard to online advertising. Pop-ups on websites may evoke negative experiences in users (Buchanan, 2015; Diao & Sundar, 2004). To avoid TV-commercials, people may simply change the channel, whereas online-advertisements interrupt internet users from their current online-activities (Abernethy, 1991). Considering the perspective of the user when designing website contents could aid in constituting more pleasurable experiences with technology. Moreover, it might even motivate users to achieve their goals (Hassenzahl et al., 2013), for example on learning or business websites. Below, we review design guidelines and make suggestions for the development of motivating pop-up windows.

2.2. Pop-up design guidelines

In the literature, several design elements have been described that make pop-ups more effective and pleasurable from a user experience perspective. First, pop-ups can only activate positive associations with brands if they do not disturb consumers in pursuing their current goals. In this line, Bahr and Ford (2011) found that, on average, users look at a pop-up only for a duration of 1.3–1.5 s. Users may not pay attention to pop-ups if they interrupt them while they are engaged in an ongoing task. More than that, users even learn to dismiss and avoid pop-ups (Bahr & Ford, 2011). Second, pop-ups that visually differ from the content of the website may stimulate more attentional effort, which leads users to remember more contents of the website and the advertisement (McCoy et al., 2007).

In cognitive psychology, furthermore, a combination of pictures and words has been shown to evoke a priming effect, in particular if pictures and words originate from the same semantic category (Dell'Acqua & Grainger, 1999). Another important consideration is the congruence between an advertisement and the website content (Flores, Chen, & Ross, 2013). When advertised products are highly congruent with the surrounding context (e.g., car ads in an automotive magazine), people recall the content of ads more frequently (Moorman, Neijens, & Smit, 2002), and may also develop a more positive attitude toward a new brand (Dahlén, 2005).

A recent study showed that repeated brief exposures to animated banner ads may induce a more positive attitude toward the brand than a static ad on a website (Lee, Ahn, & Park, 2015). Another study on learning in online environments investigated how the use of cognitive learning aids can be increased (Ruf & Ploetzner, 2014). Learning aids were presented in an obvious, but not too intrusive way, either as a static or dynamic window with learning material. The results of eye movements and learning activities showed that learners benefited more if learning aids were displayed dynamically instead of statically. This leads to the conclusion that the presentation of obvious, but not intrusive windows may attract more attention from the user.

Because studies have often focused on the impact of cognitive factors in online environments, the present research aimed to examine the possibility of providing motivational assistance. A motivating environment may increase users' positive emotions and might even enhance performance.

3. Motivation in online environments

3.1. Motivation and goal pursuit

Motivation is important online and offline, because it explains parts of an individuals' performance and behaviour. It can be defined as the "activating orientation of all current actions toward a positively valued goal state" (Rheinberg, 2004, p. 15). In most definitions, motivation is the energy an individual mobilizes to pursue a goal, such that goals direct subsequent behaviour. According to Locke and Latham (2002), goals that are specific and difficult lead to the best performance outcomes. To reach their desired goals, individuals oftentimes develop action plans that enable them to achieve a specific end state.

Individuals have attitudes toward increasing or proving ability in achievement situations, and researchers differentiate between learning and performance goal orientations (Dweck & Leggett, 1988). Individuals with a performance goal orientation aim to demonstrate their competence and gain favorable judgments from others, whereas individuals with a learning goal orientation focus on developing their skills further. Therefore, someone with a learning goal orientation seeks for stimulating tasks which offer the possibility to improve one's knowledge and skills. On the other hand, people with a performance goal orientation strive to prove their competence and favor tasks that minimize mistakes, at the expense of obtaining new abilities (Yi & Hwang, 2003).

Self-regulation skills are important for learning- and performance-related settings and can be acquired across the lifespan (Stamov-Rossnagel, Bittner, & Staudinger, 2009). Goal-setting techniques can be employed to train self-regulation competencies in learning environments. For instance, an empowerment program was constructed to improve goal-monitoring and self-regulation of students (Cleary & Zimmerman, 2004). That way, students learn how to set motivating goals for themselves and develop their self-regulation competencies further.

Online environments can be challenging for learners, because they require self-regulatory skills. The present research tested the idea that pop-up windows can be employed as a tool that implements motivating goals within online environments. On an achievement-related website, motivational pop-ups were designed to evoke a positive user experience and it was tested whether pop-ups increase the association with achievement motivation.