

ATTITUDES OF COACHES TOWARDS THE USE OF COMPUTER-BASED TECHNOLOGY IN COACHING

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Coaching has become a widespread development practice. From executives to private individuals, people seek for help from professional coaches to achieve their goals. Computer technology might make coaching practice more efficient and more accessible. Parts of the coaching process could be automated and face-to-face sessions replaced by Web-based communication. However, coaches and clients might take a skeptical view toward the use of computer technology in coaching. For example, they might fear that it undermines the relationship between coach and client. We explored attitudes of coaches toward the use of computer technology. A sample of coaches ($N = 161$) responded to an online questionnaire about their opinions on the coaching process in general and about computer use in coaching. Internet self-efficacy and the preference for a systematic coaching approach were correlated with positive attitudes toward computer use in coaching. No age or gender effects were found. Implications for further research are discussed, for example, the need to investigate the attitudes of clients toward computer use in coaching as well. Practical implications include increasing the Internet self-efficacy of coaches to foster more positive attitudes toward computer-based coaching tools. Furthermore, such tools should aim to support a systematic coaching approach.

Keywords: coaching, computer-based coaching, attitudes toward computer use, technology acceptance

Coaching has become a widespread development practice with different methods and approaches (Bono, Purvanova, Towler, & Peterson, 2009). Three major approaches are executive coaching for managers, life coaching for personal issues and workplace coaching by mentors (Grant, 2005). While mentors help less experienced employees within their own organization, coaches are usually external professionals (Joo, 2005). Coaching is becoming increasingly popular and commercialized, which will lead to more demand for high-quality services and pressure to cut costs (Maher &

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Pomerantz, 2003). As coaching becomes more popular, clients and their organizations will become more sensitive to quality-related aspects while an increase in the number of coaches will lead to more price competition. These trends could favor an increase in the use of computer technology in coaching. Such technology could help to standardize and evaluate coaching processes to improve quality control. Furthermore, coaching services could be offered at a lower price, for example, if some face-to-face coaching sessions were replaced by computer-mediated communication.

Computer-based technology could also make coaching practice more efficient and more accessible for a broader target group (Ubben, 2005). Through the use of e-mail, videoconferencing, dedicated software, and the like, coaches and their clients could gain more flexibility and would not be restricted with regard to time and place. Furthermore, information, exercises and tasks could be organized, linked, and transmitted between coach and client. However, in many fields of organizational activity, the advent of new technology can be met with resistance (e.g., Dillon & Morris, 1996, Fisher & Howell, 2004). Thus, it is important to understand the attitudes of coaches toward the use of computer technology in coaching.

This study explored the attitudes of Swiss coaches about the use of computer-based technology in coaching as well as correlates of those attitudes. A sample of coaches responded to an online questionnaire about their opinions on the coaching process in general and about their attitudes toward computer technology. The results contribute to an understanding of individual differences in coaches that may affect the adoption of computer technology in coaching.

Computer-Based Technology in Coaching

There are many definitions of coaching (e.g., Grant, 2005; Joo, 2005). They share the idea that coaching is a collaborative relation between a coach and client aimed at improving the client's ability to attain goals in a self-directed manner. For example, Stober and Parry (2005) define coaching as "a collaborative process of facilitating a client's ability to self-direct learning and growth, as evidenced by sustained changes in self-understanding, self-concept and behavior" (p. 14). In his literature review, Joo (2005) defines executive coaching as "a process of a one-on-one relationship between a professional coach and an executive (coachee) for the purpose of enhancing coachee's behavioral change through self-awareness and learning, and thus ultimately for the success of individual and organization" (p. 468). More generally, coaching tries to attain sustained behavior change in targeted behaviors (e.g., Brotman, Liberi, & Wasylyshyn, 1998).

How could such a process benefit from computer technology? Computer technology could enhance counseling efficiency (Knatz, 2012; Ubben, 2005). For example, computer-based coaching processes may be more accessible and flexible. For their interactions, coaches and clients could use e-mails, Internet telephony (e.g., Voice over IP), text messages, online chats, or video-conferencing instead of accomplishing all the sessions face-to-face. Coaching sessions could thereby be conducted from different locations. Coaches and clients could exchange videos, documents, links, and texts to inform each other about the next steps, recent developments, useful information, thoughts, ideas, and progress so far. In addition, computer technology could also be used to automate some parts of the coaching process. For example, information and tasks such as homework assignments could be predetermined and automatically presented to the client via computer. Furthermore, progress could be recorded by computer technology, for example, through evaluations by others or self-evaluations. Through such innovations, computer-based coaching would become less cost-intensive and more accessible for a wider range of clients than the traditional face-to-face approach that is often reserved for executives. However, coaching processes could either use many or only a few innovations of computer-based coaching. Just as blended learning combines e-learning with classroom learning, coaching processes could combine face-to-face sessions with computer-based coaching to maximize advantages.

To realize such potential, however, evidence is needed on both the efficacy of computer-based coaching and users' (i.e., coaches and clients') attitudes. Currently, there are too few theoretical models and published studies about computer-based coaching to derive general conclusions about these issues. In a study about coaches' perceptions of their relationship with their clients, coaches

filled in an online questionnaire about their coaching practice and the working alliance with clients (Berry, Ashby, Gnilka, & Matheny, 2011). The coaches' perceptions did not differ significantly between face-to-face and distance coaching practices (e.g., coaching by phone or e-mail). Therefore, from the coaches' perspective, distance coaching practices do not necessarily harm the working alliance. One study evaluated a computer-based coaching program designed to help junior scientists improve self-management competencies and work-life balance (Cornelius, Schumann, & Boos, 2009). Participants used a computer program to define career and work-life balance goals and to set priorities. Then they discussed these goals with their coaches in a chat room. Three months after using the program for 2 weeks, participants reported significant improvements in self-management and work-life balance. Furthermore, acceptance of the program was high. In another study about e-mentoring for women, the participants used a computer program to conduct online meetings with their mentors and participate in discussions and group mentoring. The communication between mentors and participants was either synchronous in online meetings or asynchronous (e.g., via e-mail). The majority of participants were satisfied with electronic communication with their mentors (Headlam-Wells, Gosland, & Craig, 2005).

Indirect evidence for the potential benefits of computer-based coaching comes from related fields like psychological assessment and psychotherapy, where computer technology has been increasingly implemented and evaluated (Peñate, 2012). Both coaching and psychotherapy comprise a goal-oriented change process (Kilburg, 1996) that is mediated by the collaboration between the therapist or coach and the client. Computer-based psychotherapy is diverse, but often based on cognitive-behavioral therapies (Peñate, 2012). For a variety of symptoms related to mental health problems, computer-based psychotherapy can be as effective as traditional face-to-face therapy in helping patients to deal with symptoms (Barak, Hen, Boniel-Nissim, & Shapira, 2008; Berger & Andersson, 2009; Cuijpers et al., 2009; Kessler et al., 2009). Sloan, Gallagher, Feinstein, Lee, and Pruneau (2011) conducted a meta-analysis on the effectiveness of treatments via communication technology (e.g., telephone or Internet) for posttraumatic stress disorder (PTSD) symptoms, including a total of 13 studies with 725 participants. These telehealth treatments led to significant reduction of PTSD symptoms, but less so than face-to-face treatments. For the reduction of depression symptoms, the authors reported comparable outcome effects between telehealth and face-to-face treatments. In another meta-analysis on the effectiveness of computer-based psychotherapy for anxiety disorders, no significant differences between face-to-face and computer-based treatments were found (Cuijpers et al., 2009). These studies show that patients with serious mental health problems can benefit from computer-based psychotherapy, so in turn it seems plausible that coaching clients could benefit from similar processes as well. The use of technology has also been tested and implemented in the related field of telemedicine. For example, in a systematic review of the research literature, Hersh et al. (2001) showed that telemedicine is used in a variety of health care areas and can be effective. We now turn to the issue of attitudes toward the use of computer technology in coaching and factors that might influence these attitudes.

Attitudes Toward Computer-Based Technologies

People differ in their overall willingness to use computer-based technology. The Technology Acceptance Model (TAM) (Davis, 1986) describes antecedents of computer acceptance and related behaviors. It states that perceived usefulness and perceived ease of use influence the user's attitude toward the technology (Davis, Bagozzi, & Warshaw, 1989). Therefore, if people think a technology is easy to use and useful, their attitudes toward it will be positive and they will intend to use it. However, people often have ambiguous attitudes toward new technology and worry about possible negative aspects, for example, technical defects or lack of user-friendliness (Dillon & Morris, 1996, Fisher & Howell, 2004).

The goal of this study is to explore the attitudes of coaches toward the use of computer technology in coaching, for example, to facilitate administrative tasks (e.g., invoicing), data collection and analysis, the planning of the process, and the interaction between coach and client. Especially the latter aspect could provoke resistance, because the use of computer technology can

also be seen as a threat to the interaction process and not as a facilitator. For example, critics of computer-based psychotherapy emphasize the importance of the therapist-client relationship for success, suggesting that computer-based methods could have severe disadvantages compared with traditional face-to-face therapy (Berger & Andersson, 2009). Similarly, coaches and clients often consider their relationship as an important success factor of the coaching process (Kemp, 2005). For example, Kilburg (1996) defines executive coaching as “a helping relationship formed between a client (. . .) and a consultant who uses a wide variety of behavioral techniques and methods to help the client achieve a mutually identified set of goals” (p. 142). Some people could view computer technology as a threat to the coaching process because they believe it might impair the relationship between coach and client. As face-to-face interaction offers often more cues (e.g., nonverbal expressions) compared with computer-mediated communication, some people might fear that information that is vital for relationship building would not be exchanged and the relationship therefore flawed. Referring to research on psychotherapy, McKenna and Davis (2009) argue that the relationship or alliance between coach and client might account for 30% of coaching success and is therefore an important success factor in executive coaching. They further point out that there is a trend in executive coaching to use e-mails, text messages, and video conference calls as means of communication and raise the question how a relationship with the client can be built and sustained when there is less face-to-face interaction.

On the other hand, computer-mediated communication such as video conferences via Internet could enable coaches and their clients to interact with higher flexibility relating to location. Furthermore, face-to-face interaction is not necessarily per se the best approach for all clients. In some cases, it could also have a negative influence on the coaching process, for example, if the facial expressions of the coach disturb the client (Ziemons, 2012). Communication via e-mail could reduce the inhibition threshold for some people to contact a coach and to discuss their problems (Knatz, 2012; Ubben, 2005). It also allows the client to spend time thinking about the input of the coach instead of feeling obliged to come up with an elaborate answer right away. Therefore, it seems premature to assume that computer-mediated communication leads to an overall impairment of the relationship between coach and client. In addition, the aforementioned study of Berry et al. (2011) showed that the working alliance between coaches and their clients is not necessarily different in distant coaching practices compared with face-to-face coaching.

In the next sections, we discuss two individual factors that might influence coaches' attitudes toward computer technology in coaching: (1) Internet self-efficacy and (2) preference for measurable goals, empirically supported methods and outcome evaluation. We will argue why we think these factors are significantly related to general attitudes toward computer technology in coaching.

Internet Self-Efficacy

The use of computer technology in coaching will involve Internet-based applications, just like in computer-based psychotherapy. To feel confident using these Internet-based applications, coaches and clients need to possess a minimal amount of Internet self-efficacy.

Self-efficacy is the self-appraisal of one's capabilities to deal with certain situations or to achieve certain goals, so it is “concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122). These judgments influence people's motivation and behavior. People whose belief in their capabilities in a certain domain is low tend to avoid related behaviors or to invest little effort in trying to achieve related goals when faced with difficulties. Conversely, people with high self-efficacy beliefs for certain goals or tasks are convinced that they can master difficulties and succeed. Therefore, they are more likely to invest effort to reach their goals.

Internet self-efficacy is “the belief in one's capabilities to organize and execute courses of Internet actions required to produce given attainments” (Eastin & LaRose, 2000, p. 1). In other words, if this belief is high, people think that they are able to use Internet applications in a successful way. As mentioned above, the TAM states that the perceived ease of use of an application has an influence on the attitude toward this application. For example, people with higher Internet self-efficacy have more positive attitudes toward computers than people with lower Internet self-efficacy

(Torkzadeh & van Dyke, 2002). Furthermore, higher Internet self-efficacy has a positive impact on attitude toward using a Web-based tax-filing service (Hsu & Chiu, 2004). Hence, coaches with high Internet self-efficacy should have a positive attitude toward the use of computer-based technology in the coaching process. We therefore propose:

Hypothesis 1: Coaches with higher Internet self-efficacy have more positive attitudes toward the use of computer-based technology in the coaching process than coaches with lower Internet self-efficacy.

Preference for Systematic Approach

Coaching is a recent field of activity with an ongoing debate about the right quality standards (e.g., Bono et al., 2009). For example, the International Coach Federation (ICF) has defined 11 coaching core competencies. These competencies reflect the necessary skills a professional coach should demonstrate (International Coach Federation, 1999). However, the development of these core competencies was not based on empirical findings from research studies (Griffiths & Campbell, 2008). To ensure a satisfactory level of quality, Grant (2005) suggests that “coaching needs to be evidence-based” (p. 2), and “the coaching process should be systematic and goal-directed” (p. 4). Joo (2005) describes executive coaching as a structured process that “provides systematic approaches” (p. 475). Computer-based technology could be a helpful tool to ensure that coaching processes are structured, goal-directed, and systematic. More precisely, the use of such technology could help to ensure a minimum standard of quality by helping to structure the coaching process and measure its progress and outcome. For example, the specific goals and the sequence of tasks, actions, and meetings could be determined. This would allow for transparency in the planning of the process, and a clear method could be established right from the beginning of the process. Furthermore, the task fulfillment of the client could be monitored. Even the dialogue between coach and client could be guided or simulated by computer technology, as it is done in some Web-based psychotherapy programs (e.g., Meyer et al., 2009). In addition, outcome evaluation could be facilitated by computer technology: Feedback of others or self-evaluations could be collected via the Internet and relevant data such as the communication between coach and client could be stored (Ubben, 2005). This feedback and data could then be analyzed and the coaching process adapted according to the results.

Given the many possible benefits of computer use in coaching, it is likely that coaches with higher preferences for a systematic approach in coaching (measurable goals, clear and scientifically validated coaching methods, and outcome evaluation) have a positive attitude toward the use of computers. Therefore, we propose:

Hypothesis 2: Coaches with a higher preference for a systematic approach in coaching processes will have more positive attitudes toward the use of computer technology in coaching than coaches with a lower preference for a systematic approach.

We also measure factors such as gender, age, coaching experience, or the type of coaching to obtain more comprehensive data about the participants of this study. We now discuss gender and age as factors that might influence attitudes toward computer use because of the stereotype of the typical computer user being young (Czaja & Sharit, 1998) and masculine (Ware & Stuck, 1985).

Gender

In the past, girls and boys were socialized differently with regards to computer technology (Whitley, 1997). Mass media often conveyed a masculine image of computer technology and the typical computer user (Ware & Stuck, 1985). Some researchers have found gender differences in general attitudes toward computers. For example, Shashaani (1997) found that female college students had less interest in computers and less confidence in using them compared with male college students. However, in a meta-analysis, Whitley (1997) reported zero gender differences in beliefs about computers and only very small gender differences in computer-related behaviors. Given today’s vast diffusion of computer-based technology in almost every field of professional or leisure activities, it

is unlikely that a significant number of women still regard computer technology use more as a masculine activity than an everyday matter of course. Therefore, we do not expect significant gender differences in the participants' attitudes toward the use of computers in the coaching process. However, in the aforementioned study of [Cornelius et al. \(2009\)](#) on the effectiveness of an online coaching program, "female participants reported less media competencies than males" (p. 54). Therefore, we will control for the influence of gender in the data analysis.

Age

We will also control for the influence of age in the data analysis, because some studies showed that younger and older adults differ in their attitudes toward computers (e.g., [Marquié, Thon, & Baracat, 1994](#)). Older adults sometimes feel less comfortable when dealing with computers than younger adults. This may partly reflect a cohort effect: Older adults may have less experience with computers ([Czaja & Sharit, 1998](#)). In a study with older adults, [Jay and Willis \(1992\)](#) showed that feelings of comfort and competence when using computers could be increased via direct experience with computers. Younger adults often have more experience with computers and this since a younger age, so it is possible that younger coaches will have more positive attitudes toward the use of computer technology in coaching than older coaches. However, the aforementioned studies about the effect of age on attitudes toward computers are older and may be outdated. Furthermore, as we said before, the use of computer-based technology is nowadays an everyday matter of course. It is therefore possible that older coaches already have become accustomed to computer use in general and do not differ significantly in their attitudes toward computer use from younger coaches. In the current study, we measured the attitudes of Swiss coaches toward the use of computer technology, their Internet self-efficacy and their preferences for measurable goals, scientifically supported coaching methods and outcome evaluation via an online questionnaire.

Method

Participants

We conducted an Internet search for e-mail addresses of coaches in Switzerland on Google using a combination of the terms *coach* or *coaching* and *Switzerland* in French, German and English. This procedure led us to the Web sites of professional associations, where we found most of the e-mail-addresses we used in contacting potential participants. For example, 1,079 e-mail addresses were listed on the Web site of the professional association *Berufsverband für Coaching, Supervision und Organisationsberatung* (BSO). The BSO is the largest association of coaches in Switzerland. Active members must have formal training that is accredited by the BSO. Another 102 e-mail addresses were listed on the Web site of the Swiss Charter Chapter of the ICF. The ICF is an international association that trains and certifies professional coaches. It refers to itself as "the world's largest nonprofit coaching association" ([International Coach Federation, 2013](#)). Members must have completed 60 hr of training in coaching according to ICF requirements. Both associations promote professional codes of standards and ethics and its members are bound by these codes. We found additional e-mail addresses via Google on Web sites of individual coaches or coaching firms. The Internet search on Google was stopped when it led to 10 coaches who had already been found before. This approach led to a total of 1,372 e-mail addresses of coaches in Switzerland. These 1,372 coaches were contacted via an e-mail message containing a link to the questionnaire. The contact message also asked them to forward the link to other coaches.

In total, 310 participants started the online questionnaire (response rate: 22.6%), but 149 data sets were excluded from final analysis. Eighty-two participants only started the questionnaire and answered less than 10% of all items. Another 41 had over 60% missing values on the rating scales, and 26 participants had less missing values but did not answer the key questions on new technology. Therefore, the final sample consisted of responses from 161 coaches. The mean age of these participants was 49.6 ($SD = 8.2$) with a range of 27 to 71 years of age. Eighty-three were female and 78 male. Most of the respondents of the final sample were Swiss citizens (90.7%) and possessed

a degree from a university or university of applied sciences (88.8%). Fifty-eight of these 161 participants possessed a graduate degree (e.g., Master), while nine possessed a doctoral degree. The participants had majored in many subjects, with psychology (16.2%) and economics (11.8%) being the most frequent. Only six participants had practiced for less than 1 year as coach, while 58 had practiced as coaches between 1 to 5 years, 42 between 6 to 10 years, 32 were coaches between 11 to 15 years, 11 between 16 to 20 years, and 12 coaches since more than 20 years. One hundred respondents practiced alone, while 30 worked in small organizations between two to nine people. Only 31 coaches worked in larger organizations. Sixty-eight respondents offered both executive coaching as well as life coaching, 42 respondents offered only executive coaching, 27 respondents offered only life coaching, while the rest offered other types of coaching, such as career coaching or business coaching. Both individual as well as group coaching was offered by 118 respondents, while 43 respondents offered only individual coaching. The vast majority of respondents (155) had completed training or certification in coaching and were members of a coaching association (141). When asked to rate the importance of several theoretical orientations on a 7-point Likert scale, participants rated the importance of the systemic approach to coaching the highest ($M = 6.30$, $SD = 0.96$). Other theoretical orientations with rather high ratings were the humanistic approach ($M = 5.80$, $SD = 1.10$) and social constructivism ($M = 5.08$, $SD = 1.40$).

Procedure

We conducted preliminary expert interviews with three Swiss coaches as well as with three Swiss HR professionals to get a detailed understanding of their views of the coaching process, its typical problems and first opinions on the use of computer-based technology in coaching. Interviews were transcribed verbatim and analyzed for main themes. The results of these analyses informed the topics covered and the questions asked in the survey. For example, interviewees said that having a clear method from the start of the process or evaluating the outcome are important quality aspects of coaching. Consequently, we asked related questions in the survey. The online questionnaire was created using the Web-based Qualtrics survey software (<http://www.qualtrics.com>; Qualtrics Labs, Inc., 2011). We carefully selected the questions to make sure that the participants needed at most 15 to 20 min to complete the questionnaire. Participants were contacted by e-mail. In the invitation mail, the participants received the link to the questionnaire and were then guided through the response process by information and instructions in the survey. Furthermore, they were provided with an e-mail address in case they would have had further questions or problems. Participants could choose to complete the survey in either German or French, which are the two most widely spoken national languages of Switzerland. After 1 month, a reminder mail was sent to coaches who had not yet responded. By creating the questionnaire in both languages, sending a reminder mail and limiting the estimated completion time to 20 min, we tried to apply survey design best practices to maximize the sample size and response rate (Baruch & Holtom, 2008). After the time period for responding to the survey expired, the results were downloaded from Qualtrics and then analyzed using SPSS software.

Measures

For all scales, participants indicated their degree of approval of each item on a 7-point Likert scale. The scale anchors ranged from 1 = *strongly disagree* to 7 = *strongly agree*, with 4 = *neutral*.

Attitudes toward the use of computer-based technology in coaching. We created a 6-item scale to measure participants' attitudes toward using computer-based technology in coaching. Table 1 depicts the English translation of the items of this dependent variable as well as their means and *SDs*. The six items were prefaced with the following wording: *A computer system integrated in the coaching process could . . .* The participants then indicated their endorsement of six possible facilitations via the use of computer technology (e.g., *facilitate interactions between coach and client*, or *facilitate the planning of the intervention*). Internal consistency of the scale was $\alpha = .77$.

Internet self-efficacy. Six items were used to measure Internet self-efficacy of participants. Table 2 lists the English version of these items. Five items were drawn from the general Internet

Table 1
Means and SDs for Items of Attitudes Towards the Use of Computer-Based Technology in Coaching

Item	<i>M</i>	<i>SD</i>
A computer system integrated in the coaching process could . . .		
. . . facilitate administrative tasks.	5.87	1.05
. . . facilitate data collection.	5.65	1.16
. . . facilitate systematic data gathering for every client.	4.87	1.45
. . . facilitate data analysis and retrieval.	4.49	1.58
. . . facilitate the planning of the intervention.	4.06	1.62
. . . facilitate interactions between coach and client.	4.05	1.52

Note. $N = 161$.

self-efficacy scale (GISE) of Hsu and Chiu (2004). These five items reflect general and widespread Internet-related activities that do not need specific training (e.g., *I feel confident finding information by using a search engine*, or *I feel confident sending e-mail messages*). We added a sixth item to measure if the participants also feel confident to use Web-based applications to plan and coordinate meetings, *I feel confident planning events or meetings on-line* (e.g., *Doodle*, *Google Calendar*, etc. . .). This item was not part of the original scale of Hsu and Chiu (2004), but the use of such applications reflects the activity of coaches in scheduling meetings with or activities for their clients. We chose these two examples because both Web-based applications allow users to plan and coordinate meetings and activities with others and need only Internet access and a Web browser. Furthermore, because of recent media coverage about Doodle in Switzerland (Doodle, 2012) and the general popularity of the Google platform we believed that many participants know at least one of the two applications. The items were translated into French and German by two native speakers of each language. Cronbach's α for this scale was $\alpha = .93$. When omitting the sixth item in the reliability analysis, Cronbach's α for this scale was $\alpha = .95$.

Preference for systematic approach. A 6-item scale was created to assess the preference for a systematic approach in coaching with measurable goals, scientifically supported methods, and outcome evaluation. Table 3 depicts the English translation of these six items, which were loosely based on (1) Grant's (2005) suggestion that coaching processes should be evidence-based and goal-directed, (2) Joo's (2005) notion of executive coaching as a structured process with systematic approaches, and (3) considerations of the PRACTICE model of coaching of Palmer (2008), a problem solving and solution-focused model. However, the wording of these items was deliberately very general to ensure that all coaches had the same understanding, independent of their preferred approach or school of thought. Four items referred to the professional practices of coaches (e.g., *Coaches should use scientifically validated methods* or *A coach should be able to provide a precise schedule for his or her intervention*). The other two items assessed the extent to which the coaching

Table 2
List of Items of Internet Self-Efficacy Scale

Item
I feel confident finding information by using a search engine.
I feel confident receiving e-mail messages.
I feel confident sending e-mail messages.
I feel confident saving files attached to e-mail.
I feel confident attaching files to e-mail.
I feel confident planning events or meetings on-line (e.g., Doodle, Google Calendar, etc. . .).

Table 3
List of Items of Preference for Systematic Approach in Coaching Scale

Item
A coach should have a clear method right from the beginning of the intervention.
A coach should be able to provide a precise schedule for his or her intervention.
A coach should be able to provide a measure for the effectiveness of his or her intervention.
Coaches should use scientifically validated methods.
The objectives should be clear from the beginning.
The coaching objectives should be measurable.

objectives should be clear (*The objectives should be clear from the beginning*) and measurable (*The coaching objectives should be measurable*). The Cronbach's α coefficient for this scale was $\alpha = .77$.

Results

Table 1 lists descriptive statistics for the six items composing the dependent variable of interest, namely attitudes toward the use of computer-based technology in coaching. We conducted a t test for every item against the test value 4, which represents the midpoint of the 7-point Likert scale, and thus a neutral attitude. Participants had significantly positive opinions of the statements that a computer system could facilitate administrative tasks, $t(160) = 22.60, p < .001$, data collection in general, $t(160) = 18.02, p < .001$, systematic data gathering for every client, $t(160) = 7.59, p < .001$, and data analysis and retrieval, $t(160) = 3.95, p < .001$. Participants showed a neutral attitude concerning the statements that a computer system could facilitate interactions between coach and client, $t(160) = 0.42, p = .68$ and the planning of coaching interventions, $t(160) = 0.49, p = .63$. Table 4 depicts the means, SD s, and intercorrelations for all variables.

Hierarchical multiple regression analysis was used to investigate the influence of age, Internet self-efficacy, and preferences for a systematic approach on attitudes toward the use of computer-based technology. The results are reported in Table 5. The R^2 change (ΔR^2) at each step shows the contribution of the newly included predictor to explaining variance in the outcome after having controlled for the already included predictors. The amount of variation in the outcome explained by all predictors is $R^2 = .12$ (Adjusted $R^2 = .10$).

In a first step, we entered the gender of the participants in the regression. This was done to control for gender as a possible covariate. The results confirmed that there are no significant gender differences in attitudes toward the use of computer-based technology in coaching ($\beta = -.03, p = .68$).

Table 4
Means, SDs, and Correlations Between Main Study Variables

Variables	M	SD	1	2	3	4
1. Gender	0.48	0.50				
2. Age	49.61	8.22	.19*			
3. Internet self-efficacy	6.38	0.84	-.13	-.06		
4. Preference for systematic approach	4.52	1.04	-.02	.07	.10	
5. Attitudes towards computer-based technology	4.83	0.96	-.03	-.08	.19*	.29**

Note. $N = 161$. Values for gender are expressed in 0 = women and 1 = men. Values for age are expressed in years.

* $p < .05$. ** $p < .01$.

Table 5
Hierarchical Regression Analysis With Gender, Age, Internet Self-Efficacy, and Preference for Systematic Approach Predicting Attitudes Towards Computer-Based Technology in Coaching

Predictors	ΔR^2	Attitudes towards computer-based technology in coaching	
		B (SE B)	β
Step 1	.00		
Gender		-0.06 (0.15)	-.03
Step 2	.01		
Gender		-0.04 (0.16)	-.02
Age		-0.01 (0.01)	-.07
Step 3	.03*		
Gender		0.01 (0.15)	.00
Age		-0.01 (0.01)	-.07
Internet self-efficacy		0.21 (0.09)	.18*
Step 4	.08**		
Gender		0.02 (0.15)	.01
Age		-0.01 (0.01)	-.09
Internet self-efficacy		0.18 (0.09)	.16*
Preference for systematic approach		0.26 (0.07)	.29**

Note. $N = 161$.

* $p < .05$. ** $p < .001$.

The age of participants was entered into the regression in the second step. The results confirmed that age has no significant effect on attitudes toward the use of computer-based technology in coaching ($\beta = -.07, p = .37$).

In a third step, we entered Internet self-efficacy as a predictor. The results confirmed Hypothesis 1: Coaches with higher Internet self-efficacy had significantly more positive attitudes toward the use of computer-based technology in the coaching process than coaches with lower Internet self-efficacy ($\beta = .18, p < .05$).

In a fourth step, attitudes about a systematic approach in coaching were entered into the regression equation as predictor. The results support Hypothesis 2: Coaches with higher preference for a systematic approach in coaching with measurable goals, scientifically supported methods and outcome evaluation have significantly more positive attitudes toward the use of computers in coaching ($\beta = .29, p < .001$).

Discussion

The aim of this study was to investigate the attitudes of coaches toward computer use in coaching. We expected that Internet self-efficacy and preference for a systematic approach in coaching influence coaches' attitudes.

Attitudes Toward Computer-Based Technology in Coaching

Coaches see computer technology as a helpful means to facilitate administrative tasks, data collection and data analysis. When it comes to computer technology as a way to facilitate the interaction between coach and client, coaches have a neutral attitude. We do not believe that the participants indicated a neutral attitude for this aspect only because they did not really understand the meaning of the item. As preface for the items on attitudes toward computer use in coaching, we described briefly how technology is already used in psychotherapy. For example, we said that some

therapists sometimes interact with their patients via phone or e-mail. Therefore, the participants should have understood what we mean with this item on computer technology as a facilitator of interaction. Their overall neutral attitude could stem from a lack of experience with computer-based interaction in coaching, which might lead to uncertainty about whether it has more positive or more negative effects.

Coaches also have an overall neutral attitude toward computer technology as a means to facilitate the planning of coaching interventions. This is surprising because computer technology offers a variety of possibilities to plan processes, exchange these plans between the persons involved and update plans in a flexible way. A possible explanation could be that there are too few computer-based coaching approaches and tools that could serve as positive examples.

We did not find a significant relationship between positive attitudes toward computer use and gender or age. Therefore, older and younger coaches or female and male coaches do not differ significantly in their positive attitudes toward computer use in coaching. This finding is in line with our notion that computer technology is nowadays an everyday matter of course and gender or age differences in attitudes toward computer technology are most likely a phenomenon of the past.

Internet self-efficacy. Consistent with our predictions, there was a significant association between considering oneself as being competent in basic Internet-related activities, like using a search engine or sending e-mails, and the belief that computer technology could facilitate and ameliorate the coaching process. This finding converges with other research showing that Internet self-efficacy predicts actual use of Web-based applications (e.g., Hsu & Chiu, 2004; Yi & Hwang, 2003). Referring to the TAM (Davis, 1986), Internet self-efficacy could be seen as an indicator for the perceived ease of use of Web-based applications. So coaches with higher Internet self-efficacy are likely to have higher intentions to use Web-based coaching tools. In addition, because the use of computer technology in coaching will most certainly imply Web-based communication and applications, Internet self-efficacy is an important predictor of attitudes toward computer-based coaching in general. For example, in the related field of computer-based psychotherapy, many procedures include Web-based applications (e.g., Berger & Andersson, 2009; Kessler et al., 2009; Meyer et al., 2009). Web-based applications often have an edge over traditional installed software (e.g., Lee, Saha, Yusufi, Park, & Karimi, 2009). For example, Web-based applications run on different platforms and operating systems because only Internet access and a Web browser are needed. In addition, communication between coaches and clients could be a vital part of Web-based applications by including e-mail exchange, chats, or voice over IP procedures (Ubben, 2005). However, computer-based coaching also implies certain risks. Because coaching produces sensitive data about the client, data protection is crucial (Knatz, 2012). Therefore, concerning this matter, computer-based coaching should apply best practices of other fields and contexts where these problems have already been tackled. For example, the American Medical Association has included ethical principles and guidelines concerning telemedicine in their Ethics Code to guide physicians about best practices in telemedicine (Lovejoy, Demireva, Grayson, & McNamara, 2009). The American Psychological Association (2013) and the Canadian Psychological Association (2006) have developed guidelines that recommend best practices for the use of communication technology for rendering psychological services. Computer-based coaching could benefit from similar rules of conduct.

Preference for systematic approach. We now turn to preference for a systematic approach as a predictor for attitudes toward computer use in coaching. We found a positive relationship between favoring measurable goals, clear and scientifically validated coaching methods, and outcome evaluation on the one hand, and the belief that computer technology can facilitate and improve coaching processes on the other hand. It is likely that coaches with a high preference for a systematic approach in coaching see computer technology as an expedient of structuring or even standardizing the coaching process. Computer technology could determine the sequence of steps in the coaching process (e.g., topics to discuss and tasks for the client) and allows for monitoring the interaction between coach and client, the fulfillment of tasks and goal attainment. Furthermore, coaches who like to collect and analyze data for outcome evaluation may consider computer technology as a useful tool concerning this matter. In summary, computer technology can serve as a means for

coaches with high preferences for systematic coaching processes to realize these preferences. This could be the reason why they have more positive attitudes toward computer use in coaching than coaches with lower preferences of this kind.

Limitations

This study has three main limitations. First, because we tested attitudes toward computer technology via an online questionnaire and not with a paper-pencil method, the results could be biased. Therefore, mainly coaches who already had positive attitudes toward computer use in general could have answered the questionnaire. The fact that the mean of the Internet self-efficacy scale was high might reflect sample bias because of the use of an online questionnaire. However, the level of computer-related skills required to answer the questionnaire was low. All that was needed to participate was an e-mail address and a Web browser. The participants only needed to click on a hyperlink in the e-mail they received and then click on response options or type in answers to complete the questionnaire.

A second limitation is the rather low response rate. The results could have been biased by the fact that many of the coaches we contacted via e-mail did not fill in the questionnaire. However, low response rate is not an automatic indicator of bias. We note that the demographic characteristics of the coaches in our sample closely resemble those of another sample of a recent survey of the Swiss coaching market (Seiger & Künzli, 2012), for example, characteristics such as age, gender, professional experience, educational background, membership in professional associations, and approach to coaching.

The third limitation stems from the fact that our sample is—like in many other surveys—only from one country. Therefore, it remains to be tested if our results generalize to coaches outside of Switzerland. However, the coaching market in Switzerland is very diverse. Coaching services are offered in different languages such as German, French, Italian, and English. Coaches use different coaching styles and methods and their theoretical and educational backgrounds vary as well (Seiger & Künzli, 2012). Moreover, business practice in the various linguistic regions of Switzerland is similar to practice in respective neighboring countries. For example, the French-speaking Swiss coaching market is closely related to the French coaching market. Therefore, we do not expect our results to change much in other Western European contexts.

Implications

Two important research gaps on computer-based coaching are (1) testing its effectiveness with randomized controlled trials and (2) measuring the attitudes of the persons involved toward computer use in coaching. We made a contribution toward the latter issue, but only concerning the attitudes of coaches. One avenue for future research is to assess the attitude of clients toward computer use in coaching as well. Because coaching aims to achieve a sustained change of the clients' behavior, their approval of computer use would be essential. Furthermore, the attitudes of clients' supervisors and HR managers could also be important. Often, coaching processes are not initiated and ordered by the clients themselves, but by their supervisors or by HR managers in their organizations. Therefore, their attitudes could be of practical importance. Another implication for future research is to collect further data about the current use of computer technology in coaching processes and its advantages and disadvantages. The use of computer technology in coaching is growing (e.g., Web-based communication), but more systematic research on this phenomenon is needed (e.g., Geißler & Metz, 2012).

Future research should also seek to further validate our results. The relationship between preferences for measurable goals, clear methods and outcome evaluation on one side and technology acceptance on the other has not been tested before, neither for computer-based coaching nor other contexts, for example, computer-based psychotherapy. However, it is highly possible that such a relationship exists in other contexts as well. To establish generalizability, our study should be replicated, for example, with coaches from other countries, or in other contexts (e.g., psychotherapy).

A practical implication of our finding is that coaches should be trained in the use of Web-based technology. This is because of the fact that such training most likely increases their Internet self-efficacy, which in turn might improve their attitudes toward the use of Web-based technology in coaching.

Practical implications for developers and suppliers of computer-based coaching tools come from the relationship we found between preference for a systematic coaching approach and computer-related attitudes. Given this relationship, computer-based coaching tools should help to establish measurable coaching goals, structure the coaching process and improve outcome evaluation (e.g., via systematic data collection and analysis). In other words, computer-based coaching tools that reflect this preference for a systematic approach can probably be sold more successfully than tools that solely focus on other valuable features, for example, Web-based videoconferencing.

The use of computer-based technology in coaching will most likely increase in the future. The present study extends research on coaching practice by exploring correlates of attitudes toward this important future change.

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