Person Centered e-Learning in a Major Academic Course: What are the Results and What Can We Learn from Them?

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ABSTRACT
During the last term, more than 300 students took part in a web-engineering course following a style that integrates e-learning elements into the Person-Centered e-Learning (PCeL) style developed at our department. The course serves as the focal object for tracing key aspects of the most recent action research cycle we conducted. This paper illustrates our way of combining theory and practice. In particular, we motivate our approach, sketch its socio-technical baseline, the patterns derived from the teaching/learning scenarios, experiences, students' reactions and an empirical analysis of the project. We conclude that the situated use of technology in thoughtfully designed learning scenarios has the potential to increase students' motivation and make learning more meaningful and pervasive. However, in order to add value to blended learning, instructors need well-developed interpersonal attitudes such as realness, respect and understanding.

Keywords
Blended learning, Person-Centered e-learning, motivation, action research, Person-Centered Approach

INTRODUCTION
While we have been conducting blended learning courses in a Person-Centered style for more than two years, the preceding term saw a major step forward in two respects. Firstly, we employed our cooperative, blended learning style that builds upon Rogers' Person-Centered Approach in a compulsory course with more than three hundred students. Secondly, we accompanied the lecture on web engineering and corresponding 12 lab courses with a qualitative as well as an empirical study that we fit into our overall action research strategy, as described in (Derntl & Motschnig-Pitrik, 2004) in this volume. The primary contribution of this paper is to present and to analyze a snapshot of practice and research on Person-Centered e-learning (PCeL). By sharing our experience with the readers we hope to facilitate further development that builds on these experiences and extends as well as transcends their current context.

In a nutshell, the basic hypothesis underlying Person-Centered Teaching/Learning can be stated as follows: Human beings are constructive in nature and strive to actualize and expand their experiencing organism. According to Rogers' Theory of Therapy, Personality and Interpersonal Relationships (Rogers, 1959) the actualizing tendency can unfold itself best in a climate that is characterized by three attitudinal conditions, known as Rogers' variables: *Congruence*, also called realness, genuineness, transparency, authenticity, openness; *acceptance*, also called respect, unconditional positive regard; and *empathic understanding*, a deep understanding for the feelings and meanings of the other. These must be held or lived by the facilitator and communicated to the learners such that they actually can perceive them. This can hardly be achieved if an instructor is primarily occupied with lecturing. In our view, modern learning technology relieves the instructors from excessive lecturing in so far, as a major degree of material can be put on the learning platform and provides a rich source of resources that students can explore in a problem- or task oriented manner. Time in face-to-face meetings can be used for real interactions among all participants: Topics can be elaborated in small groups, problems of common interest can be turned to cooperatively, students can give feedback to presenters of material, etc. Also, learning technology allows for sharing of results and discussions on individual contribution, presentation, differences, analogies, etc. such that students learn from more than their own project and thereby get a broader view on their work. As paradoxical as it may seem at the first glance, we argue and provide evidence that the use of e-learning elements has the potential to make education that emphasizes interaction, self-initiated work, authentic problems, and a constructive learning atmosphere, more feasible. However, our empirical data show that this kind of education is superior only, if instructors are perceived by

students as real, respectful and understanding. Otherwise, motivation goes down and students feel they profit less than in conventional courses!

The paper is organized as follows: The next section we introduce PCeL and explain our preference for this paradigm while acknowledging some hard challenges inherent in its philosophy. Section 3 presents the diagnosing, planning, and action taking phases of one action research cycle while focusing on selected patterns of activity sequences we followed in the web-engineering course. Section 4 is devoted to the strategy and results of evaluation. Finally, we interpret our results and discuss our learning as well as further research.

PERSON-CENTERED E-LEARNING – CONCEPT AND HYPOTHESES

Student-Centered Learning is a personally significant kind of learning that, integrates new elements, knowledge, or insights to the current repertoire of the learner's own resources such that he or she moves to an advanced constellation of meaning and resourcefulness (Barrett-Lennard, 1998).

Student-Centered Learning can be characterized by the following goals:

- a participatory mode in all aspects of learning and decision-making, furthering self-responsibility;
- a climate of trust in which curiosity and the natural desire to learn can be nourished and enhanced;
- helping students to achieve results they appreciate and consider worthwhile and inwardly meaningful;
- uncovering the excitement in self-initiated discovery, which leads students to become life-long learners, fosters originality, and brings out the creative potential of the individual;
- helping instructors to grow as persons finding rich satisfaction in their interactions with learners and thus increase their personal resourcefulness;
- Increasing a person's capabilities to experience and explore his or her own processes, thus raising the awareness of meaningful ways of inquiry, in other words, learning how to learn. This generic meta-capability enhances the person's disposition to successful problem solving in new situations.

(adapted form Rogers, 1983, p. 3 and complemented by ideas from Barrett-Lennard, 1998, p. 187-188)

Research in the Student-Centered Approach proved (Aspy, 1972; Cornelius-White, 2003; Rogers, 1961) that students achieve superior results along with personal growth in terms of higher self-confidence, creativity, openness to experience, self-respect, and respect towards others and their environment, etc., if they learn in an atmosphere or climate in which the facilitator (instructor, teacher, etc.) holds three core attitudinal conditions and if they perceive them, at least to some degree (Rogers, 1961):

- *Realness*, with synonyms such as congruence, transparency, genuineness, authenticity;
- *Acceptance*, else referred to as respect, unconditional positive regard, caring attitude, concern for the individual;
- *Empathic understanding*, a deep form of understanding of the meanings as well as feelings of the learner.

Concrete situations often are challenging for instructors to express the proper proportion among the three dispositions in the context of external requirements. Person-Centered courses depend not only on the instructor's plans but due to their participatory mode bear in themselves the unexpected, the chance to learn from situations in the "here and now", that requires a large amount of internal flexibility in both facilitator and students. Consequently, as will be discussed in Section 4, personal resourcefulness of the facilitator has significant influence on the students' learnings.

We view our choice of the Person-Centered Approach (PCA) as baseline for blended learning as justified on multiple grounds: Firstly, it builds on a thoroughly researched psychological and educational paradigm (Aspy, 1972; Cornelius-White, 2003; Rogers, 1983). Secondly, it goes deeper than other approaches in deriving actions from a philosophy of being that is facilitative, constructive, and furthermore, considers the personal resources of the individual in relationship with others. In other words, it promotes congruent expressions based on a confluence of authenticity, acceptance and empathic understanding. Thirdly, as shown in a recent study (Motschnig-Pitrik, 2002) on the qualifications of business informatics graduates, the direction of personal development furthered by the PCA closely matches the personal profile that industry expects from graduates. Finally, we view the open, self-responsible, and yet relationship focused tendencies inherent in the PCA as smoothly complementing the open spaces and free contacts enabled by web-based environments.

Based on our arguments explored above, our overall hypothesis is that a thoughtful integration of Person-Centered learning with web-based elements synergistically improves the quality of learning and results in

teaching/learning processes that are feasible in current academic environments. We aim to explore this hypothesis by employing action research (AR) and, in the following, turn to one cycle of diagnosing, planning, action taking, evaluation, and specifying learning (Susman and Evered, 1978; Kock, 2003).

THE ROLE OF PATTERNS IN THE CONTEXT OF PERSON-CENTERED E-LEARNING

Diagnosing

The ideas and the hypothesis just mentioned can be viewed as partial results of the diagnosing phase. Regarding technology, we see that conventional platforms are too low level and time-consuming to be used for directly supporting PCeL. Consequently, we decide to develop simple, user-centered web-templates that directly support PCeL patterns, as described below.

Action planning

In the process of striving towards the facilitation of learning on three levels: Intellect, skills, and intuition, we offered students the option to work in small teams of 2–4 persons on the elaboration of material that we, as a learning community of about 355 persons, might find helpful in the context of our studies and projects in Web Engineering. We provided downloadable versions of all lecture notes and complemented them with case studies and links. The lecture on Web Engineering was accompanied by 12 lab groups such that about 30 students participated in each group and cooperated in small teams on mainly self-initiated, practical projects. Typical projects were small web-applications with database connection, a study on features of virtual communities, web-based questionnaires, etc. There were four instructors for the whole Web Engineering module, such that each was in charge of 2–4 groups of lab courses, and one student facilitator, Jürgen Mangler, who managed the documents and processes on the online platform. The first author facilitated three lab courses and was at the same time lecturer, module coordinator, and co-designer of the evaluation procedure described in Section 4.

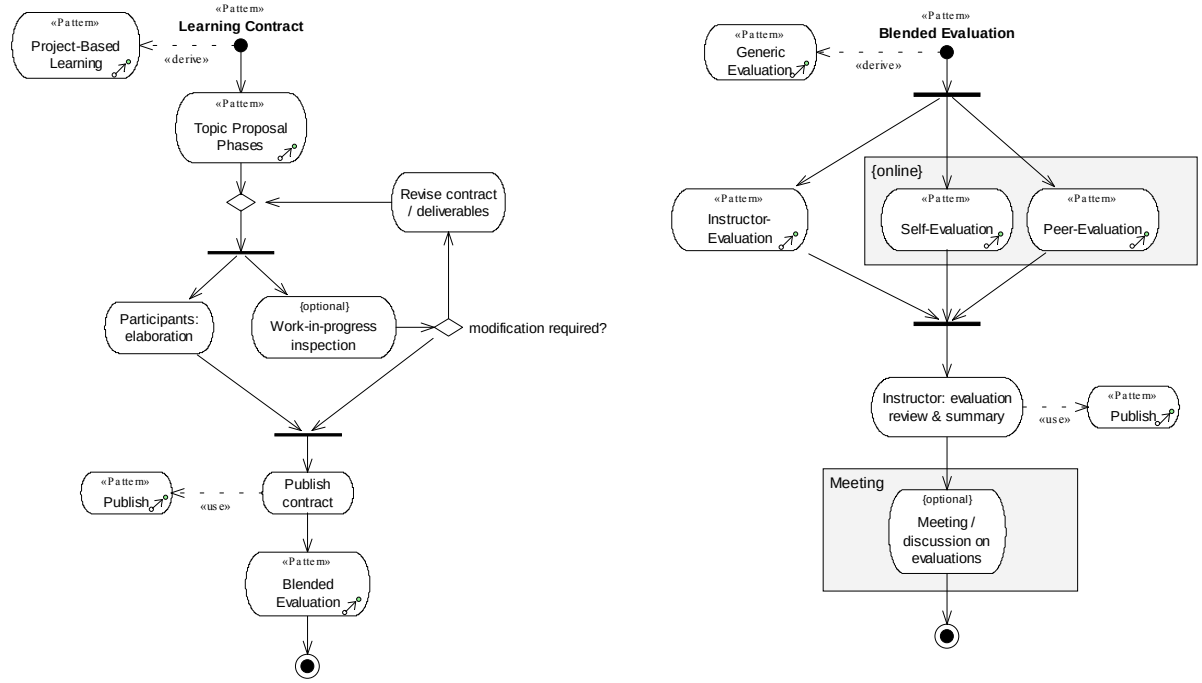
Action taking

84% of the students decided to cooperate on constructive work rather than take the exam. It was clear from the outset that a major goal was self-initiated, cooperative teamwork and learning with an emphasis on communication, reflection, and a critical, application-dependent selection of techniques. With these goals in mind, we suggested the *Web Engineering Learning License* (WELL) project to be offered to students in order to provide them with the option to engage in self-directed constructive work rather than take a conventional exam, which was offered as an alternative.

UML (Unified Modeling Language) (OMG, 2003) activity diagrams specifying the dynamic model of the learning scenario (Derntl & Motschnig-Pitrik, 2004) for the WELL project are given in **Figure 7** and described below. Students should propose (or select) a topic, sign the agreement, find resources or ask for them, plan the table of contents and the date for an intermediate version to be signed by the instructor, elaborate their project and finally upload their contribution onto our e-learning platform such as to make it available to be read by others (cf. the *publish contract* activity in the diagram on the left-hand side of **Figure 7**). Afterwards, in the *blended evaluation* phase, which is given in detail on the right-hand side of **Figure 7**, each team had to submit a self-evaluation of their work with a suggestion of grades for each team member. The self-evaluations were visible for the instructors only. Each student taking part in the WELL project, furthermore, had to peer-review at least three contributions of teams other than his or her own. In a final session the students discussed their contribution with the instructor and he or she checked their understanding of the subject matter in relationship to the core web engineering contents, but without going into detail. This mode offered a fair compromise between complete freedom and basic understanding of the core material.

We found that learning contracts are practical devices helping one to bridge the gap between curricular requirements and self-initiated and self-directed learning. They allow students to take on responsibility in an open-ended learning space, where success can be approached in an incremental fashion, very much like in an industrial project. Thus, learning becomes a transitional experience between complete freedom to learn whatever is of current interest to the learner, to evidently respecting the course- and curriculum requirements. Our way of managing learning contracts online illustrates in which ways technology and humanistic educational principles can be brought together in order to make learning more meaningful and exciting for all involved. Interestingly, although the WELL contracts required some additional effort, all 4 instructors are committed to repeat the experience in the coming term.

Figure 7: UML activity diagrams in the *Learning Contract* (left-hand side) and *Blended Evaluation* (right-hand side) patterns.



STUDENTS' REACTIONS AND EMPIRICAL EVALUATION

Evaluation

In this phase we asked for reaction sheets in order to find out how the course was received by the students. Furthermore, we were interested, for instance, in how web-based communication and learning were perceived, and whether various qualities of learning and motivation were increased. We expected that, in comparison to other courses, learning from web-based communication would be better, students' would grow more regarding their social skills, and their motivation to participate would rise. Hence, questions regarding these aspects were included in an online questionnaire that the students submitted in the beginning and in the end of the course.

In a reaction sheet, one student writes: "First of all I'd like to mention that WELL is a great idea. Often it is the case that one hears and learns the material in a lecture, but does not really understand it, because one doesn't have the time to go into all topics of the lecture. Nevertheless, I have some suggestion regarding the proceeding of WELL. Comparing the individual contributions one sees that they differ strongly. It might be wise to prescribe some format and rules, such as minimal and maximal page number, base structure of the contents, structure and expected number of citations, layout, etc...." Another student mentions briefly: "In this course you see that it is possible to give free space for students, even if the requirements are of a precise nature. Of course, the WELL contracts contributed to having more contact to the students (but also caused more work). Yet a third one comments: "From the personal point of view it was a very positive course with a good atmosphere and working climate. Technically, I would have wished more support during the realization of the project. I find the idea with WELL cool, because I can avoid the stress during the last weeks of June, if one does the time management more wisely than we did. Many thanks."

These and further reactions illustrate the students' willingness to openly share their experiences and reactions. The authors now have available several perspectives and suggestions for improvement, such as providing a catalogue of formatting-guidelines and hints for the WELL projects.

In addition to online reaction sheets we have conducted an empirical study confirming that 72.8% of the students who participated in the WELL project valued its long term learning effect as higher (41.9% much higher and 30.9% somewhat higher; cf. **Figure 8**) when compared to taking a conventional exam. Additionally, 64% of the participating students considered the engagement in the WELL project as more time-intensive. We

emphasize that the values reported here stem from our first approach to this novel form of assessment and we intend to improve several aspects of WELL contracts, both technically and by publishing guidelines.

Figure 8: Long-term learning effect and time investment perceived by WELL participants compared to conventional exams (n=136).

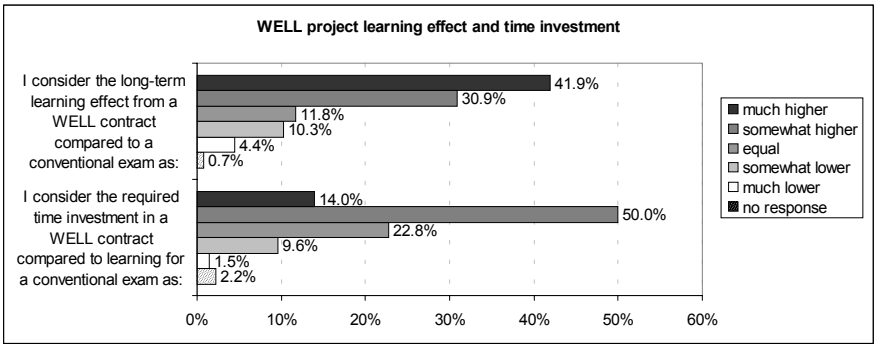
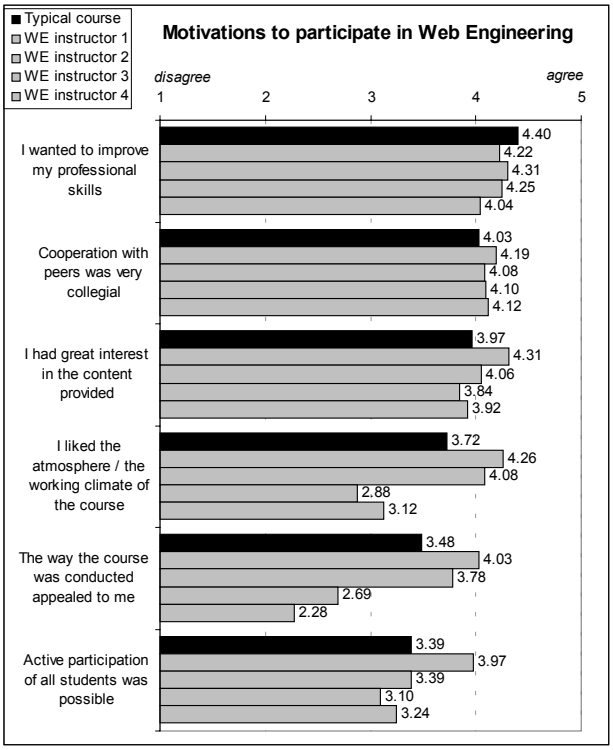
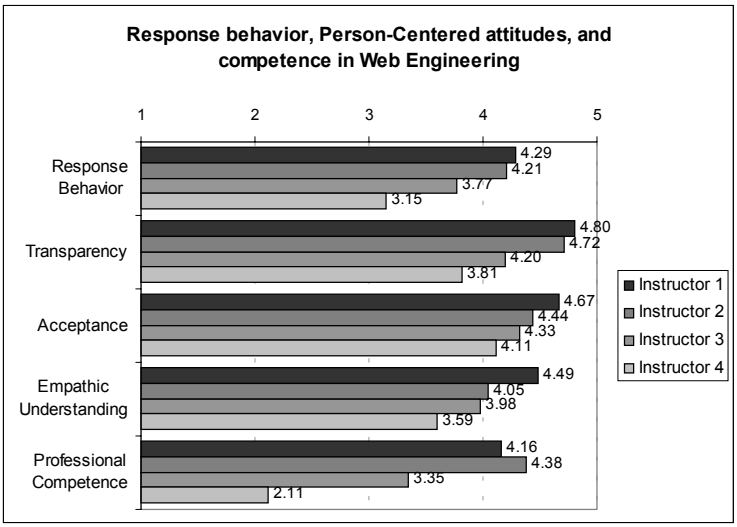


Figure 9: Motivational factors in a typical course (n=131) compared with groups of the four Web Engineering instructors (n1=38, n2=36, n3=32, n4=25).



Besides letting students estimate the learning effect, we find it particularly worthwhile to compare students' motivational orientations in traditional courses with courses following the Person-Centered learning philosophy, such as the Web Engineering course that included the WELL contract. **Figure 9** shows that, traditionally, engineering students tend to be most motivated by factors like the improvement of professional skills, their interest in the provided content, and collegial cooperation with peers. Interestingly, the motivation to participate in blended learning courses like Web Engineering can be strongly influenced by factors such as the provision of a positive working climate, an appealing way of conducting the course, and allowing for active participation of students. It is noteworthy that instructors being rated high on interpersonal values like realness, respect, and understanding, as was the case with instructor 1 and 2 (compare Figure 4), have the capability to significantly increase students' motivation. Instructors being perceived as moderately real, respectful, and understanding, unfortunately, do not raise and occasionally even diminish students' motivation to participate.

Figure 10: Response behavior, Person-Centered Attitudes and competence of four instructors in the course on Web Engineering WE-2003. (n1 = 47; n2 = 39; n3 = 47; n4 = 27) (scales: 1..very low to 5..vey high)



There were no statistically significant differences regarding the expected and the perceived motivation of *all* web engineering students to participate in this course, except for competition. In web-engineering, students typically cooperated more and competed less. However, comparing the expected and perceived motives to participate in web engineering with respect to *groups of the four instructors*, *motivation* due to the course style was increased in groups of instructors 1 and 2, who were ranked high in Person-Centered attitudes. In groups of instructor 1 the increase was statistically highly significant (t-test, $p \leq 0.001$, $n = 35$). Also, in groups of instructor 1, motivation due to students' interest in the topic (t-test, $p = 0.03$, $n = 35$) was increased significantly (compare Figure 3). An F-test, given in Table 1 showed further significant difference between the four instructors. Looking for the concrete factors that contributed to this increase we found that, precisely as in a PCeL course on project management, the positive atmosphere proved to be the strongest of all motives related to the course style (with a mean of 4.26), followed by the collegial teamwork with peers. Unlike in project management, however, the strongest of all motives to participate in web engineering was to increase one's professional competence and the interest in the provided content (both ranked 4.31 in groups of instructor 2 and instructor 1, respectively). Next followed the positive working climate (ranked 4.26 in groups of instructor 1), the wish to improve one's competence in the area (ranked 4.22 in groups of instructor 1), and the collegial cooperation with peers (ranked 4.19 in groups of instructor 1). Statistically, however, the slight differences between these motives are not significant. Consequently, there is a strong indication that instructors with high Person-Centered attitudes and sufficient competence in the subject matter are capable of increasing students' motivation along factors distributed on all three levels of learning, intellectual, skills, and feelings. It also follows, that several aspects of motivation are decreased by instructors who are perceived as being just about average in Person-Centered attitudes. It is remarkable that these changes in motivation are brought about in courses with just two hours per week over the period of one semester! A further consequence of our research is almost astonishing in how precisely it supports Person-Centered theory: The increase of motivation goes back, in the first place, to the instructor's capability of providing a positive working climate where, furthermore, students can participate actively. Given the instructor is perceived as highly real, respectful, and understanding, the positive climate is perceived by students as *a top motive* for participating in the course.

Another statistically significant difference we measured concerns the learning outcome in terms of project work. Individual projects were peer evaluated such that each student (out of 299) was supposed to evaluate at least three projects of his or her choice. During this evaluation he or she could distribute 1 to 5 bonus points to each project he or she reviewed. Interestingly, the weighed received bonus points of students participating in groups of instructor 1 accounted to 46.94, whereas the average points for groups of instructor 2 to four were less than 38.33. This indicates a clear trend but further research is necessary to prove the influence of the three core conditions on achievement in project work.

Dependent Variable		*M*	*SD*	*average means ($M_{collumn} - M_{row}$)*			
				Instructor 1	Instructor 2	Instructor 3	Instructor 4
success-orientation $F = .66$ ($p = .58$)	Instructor 1	3.42	0.95	n.s.	n.s.	n.s.	n.s.
	Instructor 2	3.39	0.85				
	Instructor 3	3.43	1.11				
	Instructor 4	3.12	1.05				
competition-orientation $F = 1.47$ ($p = .23$)	Instructor 1	1.96	0.99	n.s.	n.s.	n.s.	n.s.
	Instructor 2	1.55	0.86				
	Instructor 3	1.72	0.96				
	Instructor 4	1.64	0.88				
competence-orientation* $F = 3.00$ ($p = .03$)	Instructor 1	4.22	0.67	-	.16	.31*	.46***
	Instructor 2	4.06	0.65	-.16	-	.15	.30
	Instructor 3	3.91	0.63	-.31*	-.15	-	.16
	Instructor 4	3.76	0.81	-.46***	-.30	-.16	-
interest-orientation*** $F = 4.54$ ($p \leq .001$)	Instructor 1	4.33	0.48	-	.30*	.49***	.45***
	Instructor 2	4.03	0.64	-.30*	-	.19	.15
	Instructor 3	3.84	0.74	-.49***	-.19	-	-.04
	Instructor 4	3.88	0.84	-.45***	-.15	.04	-
course-style-orientation*** $F = 9.90$ ($p \leq .001$)	Instructor 1	4.07	0.66	-	.43**	.78***	.82***
	Instructor 2	3.64	0.68	-.39	-	.35*	.39
	Instructor 3	3.29	0.86	-.78***	-.35*	-	.04
	Instructor 4	3.25	0.86	-.82***	-.39*	-.04	-

Table 1:. Motivational orientations of students: Analysis of variance with instructor as independent variable and the motivational orientations as dependent variables. Numbers of participants for instructor 1 n = 62, instructor 2 n = 66, instructor 3 n = 77, and instructor 4 n = 47; $n_{total} = 252$. *** … $p \leq .001$, ** … $p \leq .01$, * … $p \leq .05$, n.s. … not significant, $df = 3$.

DISCUSSION AND FURTHER RESEARCH

This paper presents a snapshot on one action research cycle on Person-Centered e-learning (PCeL) that adapts Carl Rogers' Person-Centered Teaching to the requirements of conventional curricula, and extends it by the use of Internet-based communication and learning. In brief, I have shared some experiences with trying to sensitively integrate web-based learning technology into humanistic education in order to make Person-Centered Learning more feasible in today's world.

Specifying Learning

As expected, alternating between face-to-face meetings and online-communication results in a synergy between these two modes. We have experienced that the interleaving of presence in "here and now" encounters and online contributions "authored from each individual's process", encompassing previous experience, current reflection, and future expectation has been experienced as a highly constructive mode of sharing and learning cooperatively from multiple perspectives. I strongly believe that constructive cooperation based on thorough understanding of persons and subject matter came about faster than is the case in pure settings with face-to-face or online learning. However, it is only fair to mention that the effort required for the blended style still overtakes conventional teaching. Nevertheless, extra effort is slowly going down as our tools improve and experience increases. Also, the extra effort trades repetitive tasks for learning and development.

Having discussed the goals, characteristics, reactions, evaluations, and experiences of Person-Centered e-learning (PCeL) let us try to respond to the question: What is the added value of PCeL and where does it come from? Clearly, the students' reactions as well as the empirical evaluation have shown that students' most significant motives for participating in a PCeL style course have been the experiencing of a positive atmosphere, the increase of professional competence, and collegial cooperation with peers. Interestingly, these top motives each address one of the three levels of learning: intellect, skills and feelings, and the differences in mean values of these top motives were statistically not significant. These findings strongly support Rogers' theory of whole-person, or experiential learning that emphasizes the integration of cognitions, emotions, and skills, based on the actualisation tendency that is directed towards actualising the whole organism. Our evaluation has also confirmed that instructors who are perceived as highly real or transparent, respectful, and understanding motivate students more strongly than instructors who range lower in these attitudes. In other words, if persons, relationships, and the environment are constructive or resourceful, learning is most desirable, sought for, effective, and significant in the sense of actualising the whole organism (Rogers, 1983).

Further research will take several directions. First, we are conceptually modeling some generic PCeL elements – we call them PCeL patterns (Derntl & Motschnig-Pitrik, 2004) with the goal to support them with appropriate web-design elements. These are intended to provide scenarios or expressions for deep and persistent learning on the one hand and to support and simplify the organization, administration, and evaluation of PCeL courses on the other hand. Second, we continue with case studies and actions research on PCeL and, concurrently, improve the test instruments in order to be able to observe the effects of changes. Third, we are in the process of populating a virtual community of persons interested in the Person-Centered Approach in higher education (http://elearn.pri.univie.ac.at/pca) in order to have a medium to share experiences and coordinate research and everybody interested in joining is welcome. Last but most challenging and influential comes the field of staff development in the spirit of humanistic educational ideas and the use of new media in blended learning.

ACKNOWLEDGEMENTS

Sincere thanks are due to Ladislav Nykl, who had a strong influence on shaping Person-Centered e-learning. I further like to thank Dietmar Treichel and Thomas Zeleny from tomcom GmbH for providing the dayta platform, Jef Cornelius-White for his valuable comments, my colleagues Michael Derntl and Jürgen Mangler for their enthusiasm, contributions, and support, and Katharina Mallich for the statistical evaluation. The evaluation was in part supported from the 'Wirtschaftskammerpreis' of the University of Vienna.

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