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MOTIVES FOR LIFELONG LEARNERS TO CHOOSE WEB-BASED COURSES

Ron Mahieu [ron.mahieu@pedag.umu.se], Simon Wolming [simon.wolming@pedag.umu.se], Department of Education, Umeå University, Sweden, [<http://www.umu.se/english/>]

Abstract

Due to societal changes there is a growing need for distant and adult learning. The reason to participate in education and the choices that students make may differ. In this study the factors age, gender, rate of studies and parenthood have been analysed in order to see how these relate to different motivational factors for choosing a web-based course. The data has been based on a questionnaire, covering 1270 beginner students in the spring semester of 2011 and contains their background characteristics and items focusing on their motives. These could be categorized into four different motives: (1) Format, (2) Content, (3) Economic, and (4) Curiosity. The results showed that Format was regarded as the most important factor for choosing an Internet-based course, followed by Content, Curiosity and the Economic factor. Furthermore, group differences were investigated with respect to age, gender, parenthood and rate of study. The findings show that distant education fulfils an important function for mature students, women and students with children. These groups presumably consider the flexibility that web-based courses provide advantageous. Family situations or working-life obligations may contribute to this. Changes in people's working lives are likely to continue, which presumably increases the demand for flexible learning situations.

Keywords: Lifelong learning; distant education; web-based courses; student motivations; choice.

Introduction

Our globally connected world is characterized by growing social mobility and diversification of life trajectories. In the light of recent societal and economic developments people more often change careers. Individuals even have multiple career paths and they are expected to engage in lifelong learning. Ongoing transformations of the labour market, for example, have increased demands for new forms of competence. In the future people will have more professions during their working career. Career change often requires re-education or training in order to gain more knowledge, to develop new skills, or to meet the requirements in new positions. Education and the employability of individuals have come into focus and competence development and learning are now often related to lifelong career development (Graff, 2008; McLoughlin & Lee, 2008; Uskov, 2003). University students have to deal with many career-related tasks as they, according to Creed, Fallon & Hood (2009):

"[They] have to adjust to a much less structured educational experience than high school, monitor and resolve issues regarding their career direction, and manage educational and life demands as they develop as young adults. Further, they have to manage these career-related tasks in the context of family, peer, and educational institution expectations." (p. 220).

This need for career adaptability is not restricted to young adults only; it is following us through life. Mid-career changers have become an object of study and new approaches are developed (Barclay, Stoltz & Chung, 2011; Brown et al, 2012). The Swedish Prime Minister Fredrik

Reinfeldt recently declared that working-life can be stretched to the age of 75 as the traditional pension age of 65 is problematic. This implies that people should be prepared to change careers in the middle of their working lives. Moreover, the Swedish student aid system currently ends when people reach the age of 54, and the Swedish PM argued that this support system must be altered allowing mature students to receive financial support in order to be able to participate in courses at university (DN, 2012). It not only relates to career development. With an aging population, the median age of population in many countries is moving upwards, learning has become important for older adults (Davey, 2002) and, as Boulton-Lewis, Buys & Lovie-Kitchin (2006) exclaim, it is an important aspect for people aging active and productively.

Growing unemployment, early retirement as well as skill and labour shortages in specific professions have led to the creation of active aging and lifelong learning policies. During the last decade European policies, not at least those concerning lifelong learning, also indicated the need to make higher education more democratic, effective and open in space and time. Universities are even called upon to make students more employable and to enhance their flexibility in the labour market (Prokou, 2008), while Web-based learning also may open access and widen potential markets for the universities, motivating a larger and diverse group of students to participate in higher education (Hoskins & Van Hooff, 2005).

Due to these changes there is a growing need for flexible deliverance of education. Distant learning and adult learning take an important part in this. Even though distant learning had been popular long before the introduction of the internet, technological development has enabled ICT to become a more important tool for alternative forms of learning. In education, the web (World-Wide-Web) has generally been used as a source of information or even as a learning tool. This especially goes for different forms of distant learning and adult learning in which web-based courses now increasingly become an alternative option for students. Most of the barriers that are described in earlier studies were often related to technological problems. However, poor access or slow internet connections increasingly belong to the past and technological improvements have led to considerable quantitative and qualitative changes. Nevertheless, Enoch and Soker (2006) show that structural factors such as age, gender and ethnicity still play a significant role in the existence of the so-called usage gap. Their study among Israeli students shows a gender-based digital divide when it comes to the use of web-based technologies.

During the last twenty years Web-based learning (WBL, also known as e-learning) has indeed gained a larger share of the total supply of courses, as well as it brings about significant shifts in the patterns of communication and learning (McLoughlin & Lee, 2008). This is also the case at Umeå University in Sweden. Many courses at the Department of Education are offered as web-based courses, and their number is increasing (Söderström, From, Löfqvist & Törnquist, 2011). At the same time, strategies for instructional design and curriculum development for online education have become more sophisticated (Söderström, Frohm; Stödberg & Törnquist, 2012). As WBL has become a realistic alternative to regular campus-based courses, more students could choose that option. In a lifelong career perspective the need for people to participate in education may differ, as well as the educational choices that students make. This variety makes it necessary to study what factors are important for the educational choices of students.

During the late 1990s issues of accessibility and participation were in focus. Also the motives behind choice of internet-based courses and the preference of distance learning in relation to campus-based courses were examined. Findings show that control over pace and timing of learning were important for those students who chose Internet-based courses (Roblyer, 1999). In their study, Miller, Smith and Tilstone (1998) assess distance education as a means to professional development. Their study shows that a majority of students preferred to study by distance rather than more traditional courses. For reasons related to geography or family, distance learning

sometimes is the only option for further education and professional development. Bergviken Rensfeldt (2010) shows how distance education policy in Sweden has been shaped by spatial politics. This situation is influenced by the idea of an equality of opportunity for women and men to have access to higher education. Traditional female and male positions are re-produced when it comes to flexible distance education. Therefore, the flexibility of distance education intended for female population can thus be questioned. The notion of distance education has become more the notion of flexible learning (Bergviken Rensfeldt, 2010). Even though there are advantages and disadvantages with WBL, online courses also create advantages for the students that participate, especially when they obviously prefer WBL above other educational methods. When technological hinders seemingly no longer is an issue (broadband connections and computers are widely spread), it can be questioned what motivates the students to choose an online-course and participate in WBL. Which students choose WBL, and what motivates students to choose these on-line courses?

International studies show that attitudes towards WBL and the motivation to choose courses can be divided in so-called intrinsic factors (enjoyment) and extrinsic (usefulness) motivational factors (Lee, Cheung & Chen, 2005). Adults participate in tertiary education for complex reasons. Several different typologies have been constructed to identify the motivation of students. Students can consider the process of learning itself to be important, while other students are interested in knowledge for its own sake. These can be labelled intrinsic factors. Motivation for study can also be driven by socio-economic incentives, for example finding employment or to improve the quality of life (Scanlon, 2008). The last examples would be sorted under the heading of extrinsic factors. In their study on student motivation Loeber and Higson (2009) compared data from Germany and Great Britain. Their model describes the most important reasons for school students to go to university and contains of three groups of components: “Job related reasons”, “Reasons referring to the person itself”, and “Continuative education or insecurity about job”. For German – as well as British students “Reasons referring to the person itself” was the most important reason to study at university. Another of their conclusions is that social class affiliation does not seem an influencing factor in their model. One of the explanations is that independent ways of financing studies are available (Loeber & Higson, 2009).

With respect to internet use, the factors age and gender generally have received attention, as well as motivation and ability (Reay, Ball & David, 2002). However, recent social and economic changes in society may indeed also influence students and their motivation to participate in WBL, which makes further monitoring necessary in order to gain insight in possible changes in motivation. Changing demands in society will influence the deliverance of Web-based courses, quantitatively as well as qualitatively. Simpson (2008) discusses several methods to enhance student motivation, but argues that the creation of new models for student learning support demands further studies in the motivation of students. This especially involves knowledge about how student motivation can be changed, as well as further insights on the effects of their motivation for their retention in the courses. In this article we aim to study different factors, such as age, gender, rate of studies and parenthood in order to analyse how these relate to different motivational factors. Our research focuses on the questions: Which students choose web-based courses and what are their (intrinsic/extrinsic) motivations to do so? As our data for analysis covers a wide-range of students (from generation “Y” to mature lifelong learners) it will allow studying possible variations among the motivations of students that participate in Web-based courses and gain us insight in changing preferences; Knowledge that is not only important for the development and design of web-based learning methods, but also for the improvement of our web-based questionnaire as a tool for assessment.

Method

Participants and procedure

Since the autumn of 2010, all students that register at a course at the department of education, Umeå University are subject to a web-based questionnaire. The questions cover background characteristics and a number of items focusing on the motives for choosing the course. In these items respondents were asked to rate, on a five-point scale, from 1 (very important) to 5 (not important), the importance of different motives when choosing a specific course.

The sample used in the present study consisted of the student during the spring semester 2011. 1,270 students completed the questionnaire. Of 1,270 participants, 319 were males (25.1 %) and 951 females (74.9). The participants' age ranged between 19 and 68 years ($M=32.02$, $SD=9.27$). 38.4 percent of the students indicated that they had children or lived with children. 44.3 percent of the students entered a course as full-time students, while the other students entered the course as half-time students.

In Table 1, the courses given during the spring semester 2011 is described. As can be seen there is a number of courses that leads to a bachelor and master degree in education. There are a number of courses within the subject field of Sports Education. Finally, there are also a number of courses within the subject field of Human Resource Management. As can be seen, some courses are delivered both as 50 per cent and 100 per cent study-rate. The courses also vary with respect to number of credits (from 7.5 credits to 30 credits).

Table 1: Courses given during spring semester 2011 (and rate of study)

Courses	50%	100%
Bachelor course in education (30 credits*)	X	X
Master course in education and sport education (30 credits)	X	X
Leadership and leader development (7.5 credits)	X	X
Social education (7.5 credits)	X	X
Education as a science (7.5 credits)		X
Building scientific knowledge on education (7.5 credits)		X
Learning and teaching (7.5 credits)		X
Adult learning (7.5 credits)	X	
Learning and information technology (7.5 credits)	X	
Sport, upbringing and socialization (7.5 credits)	X	
Leadership in sport (7.5 credits)	X	
Leadership and learning in outdoor education (15 credits)	X	
Vocational education in a changing society	X	
Human resource management in theory and practice II (15 credits)	X	

* 30 credits equals one semester

Statistical analysis

In order to examine the underlying dimensions of the motivational items, Exploratory Factor Analysis with principal component analysis as extraction method was used. Factor retention criteria were: Kaiser-Guttman rule (eigenvalues > 1) and examination of scree-plot. As factors were assumed to be uncorrelated, Varimax rotation was used. The rotated component matrix was reported. As variables with pattern coefficients of .32 or larger are generally considered acceptable for item inclusion (Tabachnick & Fidell, 2007) this recommendation was followed in the present study. The internal consistency of the subscales was assessed through Cronbach's alpha coefficient. In order to examine if there were differences in motivation for males and females, students with or without children, full-time and half time students, these groups were compared with respect to the total scores on the sub-scales using t-test.

Results

The factor analysis indicated that there were four factors to retain. This was supported by the Kaiser-Guttman criterion and examination of the scree plot. The four factor solution represented motivational factors related to Format, Economic, Content and Curiosity for choosing an Internet-based course. Table 2 displays rotated factor coefficients for the four-factor solution. In general, all items showed large factor coefficients and According to Tabachnick & Fidell (2007) items 1-2 loaded on one factor (Content). Items 3-5 loaded in a second factor (Curiosity). Items 6-8 loaded in a third factor (Economic). Items 9-11 loaded in the fourth factor (Format).

The composite mean score, standard deviation and reliability coefficients are presented in Table 3. The items about Format had the highest mean ratings, followed by Content, Curiosity and Economic. This means that Format is regarded as the most important motivational factor for choosing an Internet-based course. The second most important motivational factor is Content. The least important motivational factor is Economic. The internal consistency of the four subscales was in general good (Format, $\alpha = .77$, Content, $\alpha = .89$, Curiosity, $\alpha = .46$, Economic, $\alpha = .72$).

Table 2: Exploratory factor analysis derived from Varimax rotation for 11 items

		Format	Economic	Content	Curiosity
1	Contents of the course appealed to me	.150	-.097	.928	.001
2	Interested in the topic	.164	-.133	.915	-.005
3	As an introduction to other studies	.043	.029	.096	.651
4	Was recommended to read the course	-.040	.029	-.167	.696
5	Want to change careers and try something new	.115	.140	.049	.722
6	Taking this course until something else pops up	.003	.852	-.051	.104
7	I am currently seeking employment	-.008	.837	.016	.115
8	In order to receive student aid	.014	.685	-.201	.001
9	Studying online appeals to me	.846	.078	.113	.031
10	Web-based learning allows me to combine studies with other	.786	-.012	.131	-.009
11	Web-based learning is a geographical condition for me to study	.824	-.053	.074	.114

Table 3: Mean scores, standard deviation and alpha coefficients for composite scores

	Mean	Std. dev	Alpha
Format	9.10	2.46	.77
Content	6.61	1.23	.89
Curiosity	4.51	2.24	.46
Economic	3.59	2.14	.72

Group differences

The total scores of the motivational sub-scales were tested for group differences. In this paper group differences were investigated with respect to age, gender, parenthood and rate of study. There were significant differences between mature and younger students with respect to the sub-scale Format. Mature students had significantly higher ratings on Format motivational sub-scale (M=9.61, SD=2.24) than younger students (M=8.65, SD=2.58), $t=-7.07$, $df=1,263$, $p<.05$. However, for the Economic motivational sub-scale younger students had significantly higher ratings (M=3.96, SD=2.40) than mature students (M=3.16, SD=1.68), $t=6.99$, $df=1,263$, $p<.05$. There were no significant age differences with respect to the Content and Curiosity motivational sub-scale.

Table 4: Significant group differences on motivational –sub scales

	Age	Gender	Parenthood	Rate of studies
Format	Mature students had higher ratings than younger students*	Females had higher ratings than males*	Students with children had higher ratings than students without children*	No differences
Content	No differences	Females had higher ratings than males*	Students with children had higher ratings than students without children*	No differences
Curiosity	No differences	No differences	No differences	Full-time students had higher ratings than half-time students*
Economic	Younger students had higher ratings than mature students*	Males had higher ratings than females*	Students with children had higher ratings than students without children*	Full-time students had higher ratings than half-time students*

*= $p<.05$

There were significant differences between males and females with respect to the sub-scale Format. Females had significantly higher ratings on Format motivational sub-scale (M=9.24, SD=2.45) than males (M=3.84, SD=2.45), $t=3.80$, $df=1268$, $p<.05$. Similarly, females had also higher ratings on the Content motivational sub-scale (M=6.72, SD=1.15) than males (M=6.28, SD=1.41), $t=4.98$, $df=1,268$, $p<.05$. However, for the Economic motivational sub-scale males had significantly higher ratings (M=3.84, SD=2.42) than females (M=3.51, SD=2.01), $t=-2.21$, $df=1,268$, $p<.05$. There were no significant gender differences with respect to the Curiosity motivational sub-scale. Moreover, we examined whether there were differences in motivational ratings between students with and without children. Students with children had significantly higher ratings on the Format motivational sub-scale (M=9.54, SD=2.37) than students without children (M=8.81, SD=2.48), $t=-5.26$, $df=1,268$, $p<.05$. Similarly, students with children had also higher ratings on the Content motivational sub-scale (M=6.73, SD=1.12) than students without children (M=6.54, SD=1.30), $t=-2.79$, $df=1,268$, $p<.05$. However, for the Economic

motivational sub-scale, students without children had significantly higher ratings ($M=3.84$, $SD=2.31$) than students with children ($M=3.19$, $SD=2.31$), $t=5.75$, $df=1,268$, $p<.05$. There were no significant differences between students with or without children on the Curiosity motivational sub-scale.

Finally, we examined whether there were differences in motivational ratings between students admitted to half-time or full time studies. Students on full time studies had significantly higher ratings on the Economic motivational sub-scale ($M=3.76$, $SD=2.22$) than students on half time studies ($M=3.46$, $SD=2.06$), $t=-2.48$, $df=1,268$, $p<.05$. Similarly, full time students had also higher ratings on the Curiosity motivational sub-scale ($M=4.83$, $SD=2.31$) than half time students ($M=4.25$, $SD=2.16$), $t=-4.51$, $df=1,268$, $p<.05$. There were no significant differences between full-time and half-time students with respect to the Format and Content motivational sub-scale.

Discussion

This study gathered data on the factors that motivate university students to choose internet-based courses. The data contains a wide range of students (from generation “Y” to mature lifelong learners). The items measuring the students’ motives were then grouped in four different clusters; Format, Content, Curiosity and Economic. The factors were then tested for group differences. In the used model, group differences were investigated with respect to age, gender, parenthood and rate of study.

Do students choose courses for reasons that are related to their competence development and possible career development? Job promotion or the alternation of job tasks can increase the need for competence development and therefore further education. The reasons for adults to participate in education can be linked to situations in their lives that relate to, for example, career, family, or citizenship changes. Even though our data material does not directly reveal aspects that are related to the individual’s lifelong learning situation, the choices they make might be caused by their aspirations for degree completion, retraining or second-career preparation. All of which, indeed, are related to lifelong career development as mentioned by Graff (2008) and McLoughlin & Lee (2008).

When it comes to gender, our findings indicate that differences exist between the motivations of men and women to participate in Web-based education. The data shows that the factor Format is most important for women, followed by Content, Curiosity and the Economic factor. The vast majority of participants in these Web-based courses are women (75 %) and the factor Format may be more important for them of various reasons (e.g. family situation). For men the factor Content ranked highest, tailed by Curiosity, Format and Economic related issues. Even though our results show that the factor Content was important for both sexes, women had higher ratings than men. There were no substantial differences between men and women in the case of Curiosity, i.e. male and female students value this factor of motivation equally. Issues related to the Economic factor were generally considered to be the least important. However, in this study men had significantly higher rates than women.

Does this confirm the “men earn, women learn” thesis, suggesting a gender divide? This leaves certainly space for discussion and it needs further analysis, but the items “searching a job” or the possibility to “receive student aid” indicate that the motivation for men (especially the younger ones) to participate in Web-based courses are to a certain extend also driven by financial incentives. Just like the conclusions in the Loeber & Higson (2009) study, our study shows that the lack of finances is not really an argument to refrain from studies, as Sweden has a well-functioning student aid system. On the contrary, as student aid is available it enables students to secure their financial situation. Especially for younger male students the student aid system seems

to be an alternative to unemployment. Participating in Web-based courses guarantees them income. Somewhat provocatively one can then launch the question: Do younger men learn in order to earn? With respect to the initial discussion on career changes and the rise of pension age in our discussion above, the need for competence development and career advancement may indeed support the idea that people generally learn in order to earn, either voluntarily or compulsory. The need to do so will presumably increase with age, in concordance with the rise of pension age and higher life expectancies.

The factors Format and Content were also most important for students with children. The obvious explanation is the fact that the family situation needs a more flexible learning situation. In this case, the factor Format (Internet-based courses can provide a good solution for students with parenting responsibilities) was appreciated higher by mature students and women. For younger students the factor Economic had a more significant importance. This might be explained by the fact that younger students, in contrast to their more mature counterparts, may be less goal-oriented. They take part in a Web-based course “until something else turns up”. Reading at university guarantees them to receive student-aid, which at least makes them financially less vulnerable, as discussed above. Another item that also correlates with the Economic factor is rate of studies, which might indicate that students who were reading fulltime, valued economic security to a higher degree. This could be interpreted as an extrinsic motivational factor. Moreover, our analysis indicates that students that were reading fulltime also valued items that related to the factor Curiosity. The motivations to be “recommended a course” and to “want to change careers and try something new” clearly have an extrinsic character.

Additionally, our findings show that distant education fulfils an important function for mature students, women and students with children. These groups presumably consider the flexibility that web-based courses provide advantageous, which confirms the arguments in earlier studies (Roblyer, 1999; Bergviken Rensfeldt, 2010). The fact that these students read part-time enhances their need for flexibility. Family situations or working-life obligations may contribute to this. This group of students especially values the factors Format and Content. Younger students on the contrary, read fulltime to a higher degree which may also depend on their financial vulnerability, as indicated earlier. This latter argument adds a somewhat randomly motivation to read a specific course; As long as they are registered as fulltime students, it does not matter what course they participate in. This needs further study, though, more specifically in relation to the career planning and ambitions of younger students.

What will the future provide? The developments within ICT technology have shown large changes that have improved the possibilities for communication and social networking. Changes in people’s working lives are likely to continue, which presumably increases the demand for flexible learning situations. It would be of interest to collect and analyse more data that relates to the lifelong career development of students, covering a wide range of ages. The methodology could be extended so that different students, with different courses and study directions are sampled, or that more data is gained at the individual level. Further studies may therefore also incorporate data that extensively shows what choices students make by adding more socio-economic factors for analysis. This data could also contain factors that capture other events in the students’ lives that influenced their aspirations to attend Web-based courses, their motivation to choose the subject or course, their career aspirations or need to upgrade competences, as well as their experiences of other academic subjects and courses.

References

1. Barclay, S.R; Stoltz, K.B. and Chung, Y.B. (2011). Voluntary midlife career change: Integrating the transtheoretical model and the life-span, life-space approach. *The Career Development Quarterly*. Vol 59, Issue 5, September 2011, (pp.386-399).
2. Bergviken Rensfeldt, A. (2010). "Opening Higher Education". *Discursive transformations of distance and higher education government*. Doctoral diss. Gothenburg: Gothenburg University.
3. Boulton-Lewis, G.M.; Buys, L. and Lovie-Kitchin, J. (2006). Learning and active aging. *Educational Gerontology*, 32(4), (pp. 271-282).
4. Brown, A.; Bimrose, J.; Barnes, S.-A. and Hughes, D. (2012). The role of career adaptabilities for mid-career changers. *Journal of Vocational Behaviour*, 80 (2012), (pp. 754-761).
5. Creed, P.A.; Fallon, T. and Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior*, 74 (2009), (pp. 219-229).
6. Davey, J.A. (2002). Active aging and education in mid and later life. *Ageing & Society*, 22, 2002, (pp. 95-113).
7. DN [Dagens Nyheter] (2012). "Fler måste kunna byta karriär mitt i livet" ["More people should be able to switch careers in the middle of their lives" Authors' translation]. Article in Swedish national daily newspaper "Dagens nyheter" by journalist Ewa Stenberg. Published 07th February, 2012.
8. Enoch, Y. and Soker, Z. (2006). Age, gender, ethnicity and the digital divide: university students' use of web-based instruction. *Open Learning: The Journal of Open, Distance and e-Learning*, 21(2), (pp. 99-110).
9. Graff, J. (2008). *Career as an experiential learning voyage: Development of experiential assessment methodology in a lifelong learning context*. Doctoral diss. Umeå: Umeå University.
10. Hoskins, S.L. and Van Hooff, J.C. (2005). Motivation and ability: which students use online learning and what influence does it have on their achievement? *British Journal of Educational Technology*, 36(2), March 2005, (pp. 177-192).
11. Kung, S.K. (2002). Factors that affect student' decisions to take distance learning courses: A survey study of technical college students in Taiwan. *Education Media International*, 39, (pp. 299-305).
12. Lee, M.K.O.; Cheung, C.M.K. and Chen, Z. (2005). Acceptance of internet-based learning medium: the role of extrinsic and intrinsic motivation. *Information and Management*, 42(8), (pp. 1095-1104). Elsevier.
13. Loeber, S. and Higson, H.E. (2009). Motivation to Study in Higher Education: A Comparison between Germany and Great Britain. *Higher Education in Europe*, 34(3-4), October-December 2009, (pp. 511-521).
14. McLoughlin, C. and Lee, M.J.W. (2008). The Three P's of Pedagogy for the Networked Society: Personalization, Participation, and Productivity. *International Journal of Teaching and Learning in Higher Education*, 20(1), (pp. 10-27).
15. Miller, C.; Smith, C. and Tilstone, C. (1998). Professional development by distance education: does distance lend enhancement? *Cambridge Journal of Education*, 28(2), (pp. 221-230).
16. Morstain, B.R. and Smart, J.C. (1974). Reasons for participation in adult education courses: a multivariate analysis of groups differences. *Adult Education Quarterly*, 24(2), (pp. 83-98).

17. Prokou, E. (2008). The Emphasis on Employability and the Changing Role of the University in Europe. *Higher Education in Europe*. Vol. 33, No. 4, December 2008 pp. 387-394.
18. Reay, D; Ball, S. and David, M. (2002). 'It's Taking Me a Long Time but I'll Get There in the End': Mature students on access courses and higher education choice. *British Educational Research Journal*, 28(1), (pp. 5-19).
19. Roblyer, M.D. (1999). Is choice important in distance learning? A study of student motives for taking Internet-based courses at the high school and community college levels. *Journal of Research on Computing in Education*, 32(1), (pp. 157-171).
20. Saadé, R.G.; Xin, H. and Kira, D. (2007) Exploring dimensions to learning online. *Computers in Human Behaviour*, 23(4), July 2007, (pp. 1721-1739). Elsevier.
21. Scanlon, L. (2008). Adults' motives for returning to study: the role of self-authoring. *Studies in Continuing Education*, 30(1), March 2008, (pp. 17-32).
22. Simpson, O. (2008). Motivating learners in open and distance learning: do we need a new theory of learner support? *Open Learning*, 23(3), November 2008, (pp. 159-170).
23. Söderström, T.; From, J.; Löfqvist, Å. and Törnquist, A. (2011). *From distance to Online Education: Educational Management in the 21 Century*. Paper presented at the EDEN 2011 Annual Conference, Dublin, Ireland, 19 - 22 June. Umeå: Department of Education, Umeå University
24. Söderström, T.; Frohm, A.; Stödberg, U. and Törnquist, A. (2012). *Designing Sustainable Online Education Environment: A Department perspective*. Paper presented at the EDEN 2012 Annual Conference, Porto, Portugal, 6 - 9 June 2012. Umeå: Department of Education, Umeå University.
25. Tabachnick, B.G. and Fidell, L.S. (2007). *Using Multivariate Statistics* (5th ed.). Boston: Pearson Education, Inc.
26. Uskov, V. (2003). A 3rd generation web-based instructional tool for education and lifelong training. *Int. J. Cont. Engineering Education and Lifelong Learning*, 13(1/2), (pp. 110-131).
27. Wang, A.Y. and Newlin, M.H. (2000). Characteristics of students who enroll and succeed in psychology web-based classes. *Journal of Educational Psychology*, 92(1), (pp. 137-143).
28. Wang, Y.; Peng, H.; Huang, R.; Hou, Y. and Wang, J. (2008). Characteristics of distance learners: research on relationships of learning motivation, learning strategy, self-efficacy, attribution and learning results. *Open Learning*, 23(1), (pp. 17-28).