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Motivational factors affecting online learning by Japanese MBA students

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In Japan, Internet based learning is still at an early stage. However, adult learners in Japanese society expect the development of flexible e-learning programs. This case study examines motivational factors affecting online learning in a Japanese and Australian MBA program, using observations, interviews and a questionnaire survey. The data were investigated from motivational categories of the ARCS model (an acronym from Attention, Relevance, Confidence and Satisfaction) and influence of e-learners' learning environment, by comparing two e-learning experience stages, beginning and final. The analyses revealed that whereas the e-learners at the beginning stage were curious about e-learning, required encouragement in individual learning situations, and set goals individually, the learners with about two years e-learning experience were motivated by interdependence, flexibility and sharing the rewards with family. The study also showed motivation of adult e-learners was individually different, but was positively influenced by online collaborative interaction, in particular with peers and in group activities. Interaction in e-learning settings went beyond social activities and the simple exchange of information. This article concludes with some suggestions for improving the design of e-learning programs for Japanese students.

Introduction

The Internet has opened opportunities for working adult learners to pursue their further studies in a more flexible way by interacting with content topics, teachers and other e-learners synchronously and asynchronously. However, in Japan Internet based learning or e-learning is still at an early stage of development. According to a recent survey by the National Institute of Multimedia Education (NIME, 2006), 16.5% of university units of study have applied an e-learning mode to credits, and only 2.2% to internationally transferable credits. According to this survey, the inhibiting factors are the burden of preparation for classes (66.9%), and concern with cost effectiveness (32.3%). Further, there are concerns over quality assurance, students' demotivation, alienation between teacher and e-learner, and the digital divide. This low adoption of e-learning is also

attributable to Japanese culture. Education in Japan values synchronous and face to face modes over asynchronous interaction more than in many other countries (Yoshida & Taguchi, 2005). 53.7% of the universities care about lack of promotion for humanistic, character building education in e-learning environments (Yoshida & Taguchi, 2005). Japanese are also anxious about reliability and security of e-learning.

Despite this slow adoption of e-learning in Japan, the number of adult learners has been increasing rapidly. MEXT (2006) showed 18.6% at graduate schools and 43.5% at professional graduate schools are adult learners who have a job. The development of flexible and learner centred e-learning programs for adult learners is expected in Japan.

The findings from studies on e-learning in other countries are mostly positive. For example, such studies report that students' satisfaction is high (e.g. Allen et al., 2004; National Center for Education Statistics, 2005) and a learner centred, collaborative knowledge building community is possible in an e-learning environment (e.g. Li, 2004; Luca & McLoughlin, 2004). Several studies show that e-learning can be more effective than classroom settings when it is designed appropriately for target learners (e.g. Becker, 2002; Chou & Liu, 2005; Scheuermann, 2003; Sitzmann & Wisher, 2005).

There have been many studies on adult e-learners' motivation in other countries. For example, Kim et al. (2004) conducted a case study on e-learners' motivation in an online MBA program in the US and revealed that both the e-learners and the faculty indicated a high level of motivation for completing the program due to their clear goals, flexibility and convenience. Stepheson (2003) studied the learning experiences of adult e-learners in Denmark, France, Germany, Greece, Hungary, Italy, Romania, Spain and UK, based on lengthy, semi-structured interviews and data analysed on a European cross sector basis, finding that key motivators were to gain new skills and knowledge relevant to work, personal development, and future careers. This study suggested e-learning succeeds where it is cutomised, organised by the user, relevant to the user's everyday work, supported by the employer, linked to just in time specialist material and fully supported within a healthy learning milieu. Bird and Morgan (2003) investigated the motivational factors of adult e-learners in Australia and found that adult e-learners are concerned with many issues, including family support, ability, fear of failure, and financial problems, and suggested that educators need to provide clear pre-information and proper advice for e-learners prior to their start. Lim (2004) compared e-learner motivation in Korea and the US, and found that American e-learners showed significantly higher motivation scores for unit relevancy, content interest, reinforcement and self efficacy than Korean e-learners, and suggested that educators realise that each culture's achievement relevant

beliefs, goals and values, and also individual level variables, influence each e-learner's motivation.

In contrast, little research has been done into motivational factors affecting Japanese e-learners. With the increase in the number of adult e-learners in Japan, there is a need for understanding Japanese e-learners and their external environments, in order to make effective use of e-learning. The purposes of this study are to examine factors affecting motivation of working adult e-learners in Japan, and to provide some suggestions for improving the design of adult Japanese e-learning programs. More specifically, this study attempts to answer the following three questions:

- What differences and similarities in motivation factors, in both internal and external categories, exist between novices and successful e-learners?
- How are general characteristics of Japanese students related to e-learning experience and motivation?
- What are elements that enhance or interfere with e-learners' motivation in this MBA program?

Methodology

Setting

This study analysed an online MBA (Master of Business Administration) program named the *Bond-BBT MBA* program in Japan. In 2001 a for profit company named *Business Breakthrough Inc*. (BBT Inc.) started this online MBA program by affiliating with Bond University in Queensland. This program, the first totally online MBA program in Japan, offers the same accredited MBA degree as the one offered on campus at Bond University under the approval of Australian University Quality Agency (AUQA). This program provides about half of its units of study in English and the others in Japanese. Whilst English units are created by the Bond University, focusing on theory in business and administration, Japanese units are developed by BBT Inc., emphasising practical business cases. The duration of this program is two years, and students are allowed to expand their study period to a maximum of five years. In July 2006, 486 e-learners are learning in this program and graduates numbered 205.

The units of study for the Bond-BBT MBA program are delivered through TV lectures (satellite TV and Video On Demand), *Blackboard* (an online learning management system) and eight-day, face to face campus study tours at the end of the first and second years. Both English and Japanese units use an English version of *Blackboard 6* adaptable to multilingual contexts, and all content, including online discussion and emails, follows the unit's language, either English or Japanese. *AirCampus*, developed by BBT Inc., enables offline synchronisation so that users can have access even

when on trains or airplanes. Each unit has around 40 to 100 e-learners under one professor and one to four teaching assistants, and assigns to groups of four or five members, weekly online discussions, four to six online virtual classes, ten quizzes, and a final examination. One unit takes 6 to 16 weeks, depending on the unit content. Unlike any other MBA programs, this program requires neither the TOEFL (Test of English as a Foreign Language) (undated) nor the GMAT (Graduate Management Admissions Test) for admittance. However, before participating in the first study tour on the Bond campus, the e-learners are required to attain 570 or equivalent in the TOEFL PBT (Paper Based Test), or to pass a 12-week English supplemental unit of study. There are three entry points a year and each has around 40 new e-learners. Currently, the completion rate for this MBA program is about 50% within two years; however, because around half of the e-learners extend their graduation by three months to two years, the rate of e-learners who completely quit this program is under 15%.

Participants

About 99% in the Bond-BBT MBA e-learning program are working adults. Most have more than 10 years of working experience in corporations. The average age is 36, and the range is 27 to 62 years. Almost all have graduated from universities, 13% with a doctor's or master's degree in another field such as technology or accounting. About 91% are males and 9% are females, 69% live in the Kanto area, around Tokyo, and 5% are on business trips in other countries including Australia, America, China, Germany, Indonesia, Korea, Russia, Thailand, United Arab Emirates, and Vietnam. Over 70% live with their own family with or without children.

For the purpose of this study, two groups were selected in May 2005, named as Group A and Group B. Group A consisted of 72 e-learners who had begun the program and just completed only one unit, in Japanese. Group B consisted of 102 e-learners who had almost completed the program, requiring only one or two more units to graduate. Thus, participants of Group A were novices whereas those of Group B were experienced e-learners. All participants, a total of 174, were self financed. A total of 138 out of 174 e-learners replied to the survey, 68 from Group A and 70 from Group B. Given the high completion rate of this MBA program, the novice e-learners of Group A will also be considered as potentially successful e-learners.

Table 1: Participants in the study

	Group A	Group B
Survey sent to	72	102
Replies from	68	70
Response rate	94.4%	68.6%

The response rate in Group B was rather low, possibly due to their deadlines for the final project required before graduation.

Procedure

The author worked for this MBA program as a manager and program coordinator for four years since 2001 when this program opened. This position offered her the opportunity to collect information which would not have been obtainable under other circumstances.

First, observation data had been collected through direct observations of e-learners' everyday online activities and the on campus tours since 2001. Observation data were recorded and reviewed by other staff members of the program. In addition to the author's observations, informal conversational interviews were held with 27 e-learners, 11 selected from Group A and 16 from Group B. Conducted on the 21 May 2005 over dinner, the interviewing required several hours and was designed to elicit from individual students factors motivating them to continue or hindering them from the online study.

Based on the data collected from the observations and the interviews, focus group research was conducted in June 2005. Focus group research can help to develop question items through organised discussion with a small group of involved persons (Gibbs, 1997). The focus group consisting of the author and three other staff members discussed and analysed the data, while eliciting a multiplicity of views. Through this discussion, motivational factors salient for our e-learners were classified into 26 items.

Using these 26 motivational items delineated by the focus group findings, a pilot survey using a five-point Likert type scale (1 for 'strongly disagree', 2 'disagree', 3 'neutral', 4 'agree' and 5 'strongly agree') was conducted in Japanese from 9 to 15 July 2005. This survey contained an open question so that the participants were able to write freely about their motivation factors. The participants were 6 novice e-learners and 11 successful e-learners. As the result of this pilot survey, two question items were deleted in order to attain high reliability (Cronbach alpha = 0.887) and four question items were integrated into others in order to be consistent with the purpose of this present study.

On the 21 August 2005, the revised questionnaire consisting of 21 question items in Japanese was distributed online to the 174 e-learners, 72 in Group A and 102 in Group B. As in the pilot survey, a five-point, Likert-type response scale was employed. In total, 138 responses were collected over 10 days.

Development of instrument

For this survey, the 21 question items were grouped into instructional and environmental categories. The group of ten instructional categories was defined as internal motivational categories, whilst that of eleven learning environmental categories was external in nature (William & Burden, 1997, in Dornyei, 2001). The former group was identified by following four categories of the ARCS model, an acronym for these categories 'Attention', 'Relevance', 'Confidence' and 'Satisfaction' (Keller, 2001) (see Table 2).

Table 2: Questionnaire survey

	Category	Subcategory	Likert question items
Internal motivational categories	Attention	Perceptual arousal	1. Various learning tools such as lecture TV, textbooks, BBS attract my attention.
		Epistemic curiosity	2. I would like to study further by myself
	Relevance	Goal orientation	3. I have my clear learning goal for each course or this MBA program.
		Present worth	4. Knowledge learned here is appropriate to my current situation.
		Experience	5. The course contents are generally familiar to me.
	Confidence	Learning requirements	6. I am sure I will be able to complete this program.
		Personal control	7. It is easy for me to study here while working.
	Satisfaction	Natural consequences	8. I am sure I can use acquired knowledge in a real setting.
		Equity	9. What I acquire here including course grades satisfies me.
		Positive consequences	10. Learned knowledge (will) lead/s me to better results in my life.
External motivational category	11. My family encourages my study.		
	12. My company helps me study here.		
	13. My colleagues in the company encourage my study.		
	14. Time flexibility is helpful for my study.		
	15. Place flexibility is helpful for my study.		
	16. Virtual class (online chat) is helpful for my study.		
	17. I try to keep good relationship with peers.		
	18. I try to find a chance to meet peers face-to-face.		
	19. Group work helps my study and understanding.		
	20. Online interaction with teachers helps my study.		
	21. Online interaction with peers helps my study.		

The ARCS model is a method for improving the motivational appeal of instructional materials, widely applied for formative evaluation studies to provide suitable suggestions for instructional designers (Keller & Suzuki,

2004). This model is an expanded Expectancy-Value theory, a positive expectancy for success and the satisfaction of personal needs, into four motivational categories. Keller (2004) explains each category as follows. 'Attention' is a prerequisite condition for starting and maintaining the study, by stimulating perceptual and epistemic curiosity. 'Relevance' refers to learners' recognition that the instructional requirements are consistent with their goals, suitable for their learning styles, and linked to their past experiences. 'Relevance' also includes achievement, affiliation, and power motives. 'Confidence' is related to self efficacy, success experience, and attribution theory. 'Satisfaction' deals with sustaining motivation and performance by using extrinsic reinforcements including positive rewards and cognitive feedback, in ways that do not have a harmful effect on intrinsic motivation. This ARCS model was developed by synthesising various concepts and theories of human motivation into each simple category.

For this present study, the selective subcategories under the four categories of the ARCS model (Gagne et al, 2005) were applied to the identification of each question item. 'Attention' consists of perceptual arousal and epistemic curiosity, 'Relevance' includes goal orientation, present worth and experience, 'Confidence' is composed of learning requirements and personal control, and 'Satisfaction' refers to natural consequences, equity, and positive consequences.

Analyses

The Cronbach reliability coefficient alpha for the overall question items was 0.878, for the items in Group A, 0.751, and for Group B, 0.663. Factor analysis was used to test the relationship with the instrument adopted by the ARCS model and the external categories. Further, an independent t-test was examined to analyse comparisons in item levels between Group A and B. All of these analyses were done with *SPSS* (Statistical Package for the Social Sciences) *Windows* V. 11.5.

Results

Factor analyses

Both Group A and B were estimated using the principal factor method. The initial eigenvalues identified four factors in each group. The cumulative percentage of variance for the fourth factor in Group A was 58.13% and that of Group B was 55.01%. After the Promax rotation (seven times for Group A and six times for Group B, until convergence was reached), factors which had loadings of 0.4 or higher on an only factor were selected. Loadings above the cutoff are in shaded cells in Table 3 (Group A) and 4 (Group B). Items deleted from Group A were five, the item No. 8, 16, 17, 18

and 19. Items deleted from Group B were three, the item No. 1, 16 and 17. Subscale reliability alphas for all the factors were over 0.70.

Table 3: Factor analysis for Group A

	Category	Question item	FACTOR (Reliability alpha)			
			1 (0.762)	2 (0.799)	3 (0.838)	4 (0.880)
Internal motivational factors	Attention	1. Various learning tools such as lecture TV, textbooks, BBS attract my attention.	-0.111	-0.011	0.067	0.799
		2. I would like to study further by myself.	0.011	-0.005	0.160	0.827
	Relevance	3. I have my clear learning goal for each course or this MBA program.	0.004	0.217	0.709	0.227
		4. Knowledge learned here is appropriate to my current situation.	0.597	-0.116	0.019	0.373
		5. The course contents are generally familiar to me.	0.396	-0.140	0.373	0.059
	Confidence	6. I am sure I will be able to complete this program.	0.139	0.363	0.328	-0.420
		7. It is easy for me to study here while working.	0.099	0.666	0.029	-0.059
	Satisfaction	8. I am sure I can use acquired knowledge in a real setting.	0.370	-0.201	0.180	0.340
		9. What I acquire here including unit grades satisfy me.	0.006	0.138	0.850	0.109
		10. Learned knowledge (will) lead / s me to better results in my life.	-0.312	-0.109	0.869	-0.128
External motivational factors	11. My family encourages my study.		-0.045	0.551	0.170	0.014
	12. My company helps me study here.		0.128	0.828	-0.160	0.009
	13. My colleagues in the company encourage my study.		-0.166	0.824	0.035	0.038
	14. Time flexibility is helpful for my study.		0.713	0.205	0.007	-0.125
	15. Place flexibility is helpful for my study.		0.763	-0.024	-0.086	-0.060
	16. Virtual class (online chat) is helpful for my study.		0.093	0.451	-0.018	0.517
	17. I try to keep good relationship with peers		0.169	-0.106	0.331	-0.299
	18. I try to find a chance to meet peers face to face.		0.129	-0.095	0.173	0.137
	19. Group work helps my study and understanding.		0.311	-0.125	0.283	-0.333
	20. Online interaction with teachers helps my study.		0.647	0.051	-0.173	-0.147
	21. Online interaction with peers helps my study.		0.527	0.002	0.075	-0.023

Table 4: Factor analysis for Group B

	Category	Question item	FACTOR (reliability alpha) 1 (0.868)	2 (0.701)	3 (0.766)	4 (0.788)
Internal motivational categories	Attention	1. Various learning tools such as lecture TV, textbooks, BBS attract my attention.	0.159	0.13	-0.08	-0.129
		2. I would like to study further by myself	0.553	0.204	0.219	0.088
	Relevance	3. I have my clear learning goal for each course or this MBA program.	0.534	-0.209	0.234	-0.282
		4. Knowledge learned here is appropriate to my current situation.	0.651	-0.137	-0.096	-0.056
		5. The course contents are generally familiar to me.	0.134	0.719	0.010	0.146
	Confidence	6. I am sure I will be able to complete this program.	0.322	0.551	0.008	0.119
		7. It is easy for me to study here while working.	0.530	0.381	-0.067	0.358
	Satisfaction	8. I am sure I can use acquired knowledge in a real setting.	0.576	0.173	0.103	-0.026
		9. What I acquire here including unit grades satisfy me.	-0.001	-0.052	0.759	0.185
		10. Learned knowledge (will) lead / s me to better results in my life.	-0.189	0.217	0.819	-0.086
External motivational categories	11. My family encourages my study.		-0.028	-0.234	0.468	0.111
	12. My company helps me study here.		0.216	-0.896	0.068	0.301
	13. My colleagues in the company encourage my study.		0.194	-0.881	-0.005	0.014
	14. Time flexibility is helpful for my study.		-0.108	-0.017	0.205	0.804
	15. Place flexibility is helpful for my study.		-0.026	-0.010	-0.053	0.580
	16. Virtual class (online chat) is helpful for my study.		0.290	-0.163	-0.200	0.037
	17. I try to keep good relationship with peers.		0.187	0.090	0.186	-0.016
	18. I try to find a chance to meet peers face-to-face.		0.447	0.095	-0.036	-0.367
	19. Group work helps my study and understanding.		0.794	-0.229	-0.085	0.070
	20. Online interaction with teachers helps my study.		0.507	0.222	-0.244	-0.119
	21. Online interaction with peers helps my study.		0.480	-0.057	0.342	-0.282

Each factor of Group A was named as follows.

1. 'Expectation for e-learning success.' This grouping consists of the benefits of e-learning settings including time and place flexibilities and online interaction.
2. 'Supporters in individual learning situations.' This grouping refers to encouragement from e-learner's company and family.
3. 'Clear goal set by individual e-learners.' This grouping deals with individual goals set by each e-learner and individual satisfaction with outcomes.
4. 'Interest.' This grouping indicates perceptual and inquiry arousal in e-learning settings.

Each factor of Group B was named as follows.

1. 'Interdependence.' This grouping deals with substantial learning through interaction.
2. 'Independence.' This grouping indicates individual goals, needs, and desires individual e-learner is pursuing.
3. 'Sharing the rewards with family.' This grouping is related to satisfaction with family encouragement.
4. 'Flexibility.' This grouping refers to e-learning flexibility.

Table 5 shows the t-test results of the Likert questions. All the values of the items in Group A were higher than those in Group A. The highest mean score was the item 'I have my clear learning goal for each unit or this MBA program' in both Group A and B. The lowest mean score in Group A was 'It is easy for me to study here while working', and that in Group B was 'My colleagues of the company encourage my study'. The highest t-value was seen in 'I try to find a chance to meet peers face to face', and the lowest t-value was seen in 'My colleagues of the company encourage my study'.

Findings and discussion

Motivation factors between novice and successful e-learners

Motivation of the novice e-learners was identified as the following four factors, 'Expectation for e-learning success,' 'Supporters in individual learning situations,' 'Clear goal set by individual e-learners,' and 'Interest.' That of the successful e-learners was the following four factors; 'Interdependence,' 'Independence,' 'Sharing the reward with family,' and 'Flexibility.' Focusing on the items differently identified between Group A and B, the main features of those factors will be discussed.

Table 5: Differences between Group A and Group B (Question item level)

No. Likert questions	Group(N)	Mean (SD)	t -test
1. Various learning tools such as lecture TV, textbooks, BBS attract my attention.	A (68)	3.40 (0.76)	-5.735**
	B (70)	4.11 (0.71)	
2. I would like to study further by myself.	A (68)	3.31 (0.89)	-9.117**
	B (70)	4.53 (0.68)	
3. I have my clear learning goal for each course or this MBA program.	A (68)	4.38 (0.62)	-4.856**
	B (70)	4.81 (0.39)	
4. Knowledge learned here is appropriate to my current situation.	A (68)	3.54 (0.70)	-5.127**
	B (70)	4.19 (0.77)	
5. The course contents are generally familiar to me.	A (68)	3.88 (0.87)	-2.544*
	B (70)	4.20 (0.55)	
6. I am sure I will be able to complete this program.	A (68)	2.79 (0.87)	-12.693**
	B (70)	4.31 (0.47)	
7. It is easy for me to study here while working.	A (68)	2.62 (1.12)	-11.689**
	B (70)	4.41 (0.60)	
8. I am sure I can use acquired knowledge in a real setting.	A (68)	3.88 (0.78)	-3.640**
	B (70)	4.33 (0.65)	
9. What I acquire here including course grades satisfies me.	A (68)	4.32 (0.80)	-0.398
	B (70)	4.37 (0.59)	
10. Learned knowledge (will) lead / s me to better results in my life.	A (68)	4.26 (0.73)	-0.277
	B (70)	4.30 (0.77)	
11. My family encourages my study.	A (68)	3.51 (0.89)	-3.356**
	B (70)	4.01 (0.86)	
12. My company helps me study here.	A (68)	3.10 (1.26)	-0.579
	B (70)	3.23 (1.29)	
13. My colleagues in the company encourage my study.	A (68)	3.13 (0.96)	-0.222
	B (70)	3.17 (1.10)	
14. Time flexibility is helpful for my study.	A (68)	4.13 (0.71)	-4.571**
	B (70)	4.67 (0.68)	
15. Place flexibility is helpful for my study.	A (68)	4.04 (0.74)	-3.965**
	B (70)	4.54 (0.74)	
16. Virtual class (online chat) is helpful for my study.	A (68)	3.32 (0.70)	-10.473**
	B (70)	4.60 (0.73)	
17. I try to keep good relationship with peers.	A (68)	3.01 (0.78)	-11.521**
	B (70)	4.49 (0.72)	
18. I try to find a chance to meet peers face to face.	A (68)	3.10 (0.76)	-13.513**
	B (70)	4.66 (0.59)	
19. Group work helps my study and understanding.	A (68)	2.99 (0.74)	-11.372**
	B (70)	4.31 (0.63)	
20. Online interaction with teachers helps my study.	A (68)	3.24 (0.76)	-6.793**
	B (70)	4.01 (0.58)	
21. Online interaction with peers helps my study.	A (68)	3.66 (0.87)	-7.065**
	B (70)	4.56 (0.58)	

Note. Group A: novice e-learners, Group B: successful e-learners
* $p < 0.05$ (2-tailed) ** $p < 0.01$ level (2-tailed)

Learning goals

Almost all the e-learners decided to enter this program with a clear goal for their future. Most respondents said that the purpose to enter this program was not to just earn the degree itself, but to acquire knowledge and skills to improve their job related performance, or to establish their own company. In general, the popularity of an MBA degree itself has been decreasing in Japan as well as in the US (*Nikkei*, 2005). It seems partly because an MBA degree is not a prescript certificate like other professional areas such as accounting or law. They rather want to acquire knowledge, and skills to pursue successful careers in business.

Interestingly, the question item 'I have my clear learning goal for each unit of this MBA program' was categorised into a different grouping between Group A and B. It seems that the novice e-learners set individual goals, whilst the successful e-learners enhance their needs, values and goals by interdependence (Johnson & Johnson, 2004). However, the constructs of this interdependence did not indicate that each e-learner cares about maintaining harmonious relationships with peers. A similar inclination was also seen in terms of the relation between e-learner and company.

E-learner's company and family

The categorisation of the question items related to e-learner's company were also different between Group A and B. The factors related to each e-learner's company can be a trigger to start the program, but it seems that they gradually develop innovative ideas which may not necessarily be related well with their current positions at their companies. In contrast, family members usually exist where e-learners study at home, partly because of housing conditions in Tokyo. Several successful e-learners said, "Because my learning behaviour influences my children, I have to study hard." Also, this result is consistent with the latest survey on the Japanese national character by the Research Committee of ISM (2005). This reveals that Japanese attitudes are changing. Nowadays, Japanese prioritise family life highly and have a tendency to value private life and avoid various social affairs including their company's problems. This point will be discussed later, but family presence cannot be disregarded for their motivation.

Flexibility

The question items related to flexibility were categorised differently. Given the fact that the e-learners of Group A had studied for fewer than two months, time and place flexibility might be regarded as just part of the benefits of e-learning, as online interaction might be. In fact, people who decide to enter this program are busy business persons, in particular at

their working prime. However, successful e-learners realise that flexibility should be a benefit, but at the same time, might cause procrastination. As the process of learning continues, e-learners are able to increase their learning and motivation strategies. In due course, individual online learning schedules including time and place seem to become fixed and not directly influenced by other factors or problems. Our learning management system (*Blackboard*) records indicated that individual online times become gradually stable; quite early morning or late at night, every day. It appears to form a habit. Japanese tend to endure hardship (Singleton, 1995), and that characteristic may partly help adult e-learners motivation.

Japanese general characteristics related to motivation

Not only were the values of the question items in Group B much higher than those in Group A, but also the interaction in Group B was significantly correlated with the internal motivational categories. In particular, group work helped each e-learner to learn and to enhance motivation. There are three possible reasons in terms of Japanese general characteristics. First, the research finding of Hayamizu (1998) is compatible. Hayamizu reported that affiliation motivation helps achievement motivation in Japanese society, on the basis of Japan's collectivism. In fact, most e-learners said that they felt responsibility when working with group members, and worked harder than when working alone.

Second, in general Japanese feel uneasy about asking questions of teachers (Matsumoto, 1999), and are sensitive to teachers' reactions. Much literature points to the relation between teaching presence and perceived learning, and indicates that interaction with teachers had a much larger effect on satisfaction and perceived learning than interaction with peers (e.g. Pawain et al., 2003; Picciano, 2002; Swan, 2001). However, Biesebach-Lucas (2005) compared email messages from American students to professors and from students in Japan, Korea, Taiwan and Thailand to professors, and found that American students were more active than other students.

Further, Japanese society encompasses high context cultures (Doi, 2001). The e-learners in this program who have worked at the same company for more than 10 years have had relatively little opportunity to interact with people in other business fields. Lack of mental health care systems in general in Japanese business society might also increase the attractiveness of online interaction. It has been unusual to meet a public counsellor or mental supporter (Wada, 2004), but it seems that adult business persons seek those who listen to their business problems or provide some advice under a relaxed mood. The e-learners said they appreciate this interdisciplinary online environment and would like to keep this online network even after they graduate. Although online communication

requires quick clear statements with its lack of nonverbal communication cues, interaction with peers online under less pressure may provide practice in sharing or converting tacit knowledge. With peers functioning as models for each other, professors have a particular role in providing appropriate tension for the online class. For example, during the first week of a unit, a professor explicitly and frequently appears online as a trigger, but after that week, assumes a more reserved presence, in order to give best scope for peer to peer interaction. Depending on the progress of these interactions, the professor may intervene with effective comments, such as 'That's a good idea, but try to find much better one,' or 'Why not more deeply examine that case?' The way to provide comments and the comments themselves may differ between professors and nationalities, but e-learners offer their opinions on the premise that their professor is always online. Japanese e-learners might derive their latent insight from those peer to peer active interactions.

The third reason is related to e-learner confidence. In general, adult learners often face various disrupting factors such as family, job and financial issues beyond their control. Adults also tend to judge changes in their intellectual abilities mainly in terms of their memory performance and in their physical capacities. In addition, Scholz et al.'s (2002) research on cross cultural self efficacy found that Japan marked the lowest among 25 countries, and reasoned that self efficacy may be valued lower in collectivistic cultures than in individualistic cultures. Interaction with peers may be necessary for Japanese to raise self confidence

Thus, Japan's collectivism assumes online group work to be valuable for motivation. However, this present study found results which are in disaccord with general collectivism. That is, both 'interdependence' and 'independence', existed in the successful e-learners. Otherwise, this 'independence' might not be equal to independence as it is depicted in the literature. This study cannot reach any conclusion, but speculative reasons might be derived from this unique program's contents that include global business issues and encompass Japanese and English, from an e-learning setting that expects independent study, from Japanese characteristics changing (Hayamizu, 2006), or from uniqueness of the adult learners or e-learners enrolled in this program. Further research on this issue will be expected.

Enhancement of and interference with e-learners' motivation

From this study's observations, interviews and questionnaires, three major elements that have enhanced the e-learners' motivation in this MBA program will be discussed. First, face to face interaction seems necessary. Many successful e-learners admitted it to be powerful. Research findings

have also suggested that face to face communication should be regarded as important in motivation (e.g. Johnson & Johnson, 2004). The second element is interaction with this program's administrators at both Bond University and BBT Inc., in both languages, Japanese and English. This interaction makes e-learners involved with organisation of this program. By continuously publicising online their feelings, thoughts and desires, and partly immersing themselves in Australian culture, the e-learners may not only strengthen motivation but also cultivate their powers of self expression and creativity.

Conclusion

The purpose of this case study was to examine various motivation factors for working adult Japanese e-learners. The data were gathered from observations over an extended period of time since 2001, and interviews and questionnaires conducted in 2005. Motivation factors of Japanese e-learners were similar to those found in other countries. The most remarkable feature, however, would be that Japanese e-learners' motivation is highly influenced by collaborative interaction, particularly in group activities. Interaction in e-learning settings goes beyond social activities and the simple exchange of information. Vygotsky (1978) identified that learners' cognitive strategy developments and verbalisations of their actions are directly influenced by their interactions with more capable members of their culture. Adult learners have individually unique experiences and backgrounds, which will make it easier to create optimum interaction with peers.

The results of this study cannot be generalised to other e-learning contexts in Japan due to the limited number of participants and question items, their unique learning situation, and the nature of this study as a case study. Further research will be needed to provide more definitive conclusions in the field of motivation of adult e-learners in Japan. In particular, we need to investigate what motivational factors influence adult Japanese e-learners under different learning situations, how individual cognitive style, characteristics, past learning experiences and backgrounds affect motivation, and how assimilation or acculturation processes and social presence in online learning environments influence motivation.

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