Initiating Intrinsic Motivation in Online Education: Review of the Current State of the Art

Paul Kawachi
Kurume Shin-Ai Women's College, Kurume City, Japan

ABSTRACT

The need to initiate intrinsic motivation in students, especially in Japanese students, in online education is introduced. An overview of the online educative process is then presented with constructivist learning theory and the various opportunities for learning interactions. These include the student-to-materials interaction, the student-to/from-tutor interactions, and the student-to-group interactions. Then within this framework, the current State-of-the-Art is presented for how to initiate the various intrinsic motivations to learn, focusing on the sub-types of personal intrinsic motivation; challenge, fantasy, and curiosity. The comprehensive literature review presented provides the rationales behind specific courseware and tutor activities to initiate these intrinsic motivations.

INTRODUCTION

"Intrinsic motivation is an evocation, an energy called forth by circumstances that connect with what is culturally significant to the person." Wlodkowski (1999, p. 7)

Research into approaches to studying now informs much of our theory and practice in tertiary teaching and learning (Kember & Leung, 1998, p. 397). This research is closely related to the qualitative differences between a deep approach and a surface approach, described by Marton and Säljö (1976a, 1976b), where the deep approach derives from the student exercising intrinsic (rather than extrinsic) motivation (Entwistle, 1979). The surface approach has since been associated with a low level of understanding (Fransson, 1977), poor-quality learning and weaker academic outcomes (Svensson, 1977).

Address correspondence to: Paul Kawachi, MA ODE, F BIELT, Kurume Shin-Ai Women's College, 2278-1 Mii Machi, Kurume City, Fukuoka 839-8508, Japan. Fax: +81 942 40 2080; E-mail: kawachi@kurume-shinai.ac.jp

The surface approach has also been related to overload (see Chambers, 1994, p. 104), slowing down and dropping-out (Rowntree, 1992, p. 72; Sherry, 1996, p. 8). Consequently, open and distance education is much concerned with nurturing a deep approach, through identifying potential factors and enhancing these factors. However, less attention has been paid to measures for the primary seeding of a deep approach and intrinsic motivation in students. Some students – particularly those in Japan (Kawachi, 1999, 2000a, 2000b) – may be culturally predisposed to or through overload at risk to adopting a less-desirable surface approach in their studying, and these students as well as others in Southeast Asia with similar educational background could benefit from measures to initiate a deep approach.

It is generally recognised (Wlodkowski, 1999, p. 9) that the traditional face-to-face contiguous education system is dominated by extrinsic motivation through a 'carrot and stick' approach with the focus on academic grades. Students entering post-secondary open or distance education may continue to hold such extrinsic motivation. These students who enter with only extrinsic motivation could benefit from the education provider initiating or helping the student discover intrinsic motivation, and this is the focus of this paper.

This study reviews the literature on how intrinsic motivations can be initiated in the student by the courseware. Here the term courseware is employed to include the various interactions between the student and medium, student and tutor, student and other students, and student and the content. These interactions are reviewed. They include pair-wise and group interactions for collaborative learning and cooperative learning. Also women's way of knowing through 'connected' learning (Belenky, Clinchy, Goldberger, & Tarule, 1997) is reviewed, and concluded to be a form of cooperative and not collaborative learning.

Concerning the various motivations to learn, it is true that the largest and most rapidly expanding purpose for continuing education is vocational (Duke, 1996, p. 628). Adults are well known to choose vocational more than any other type of learning and are generally already intrinsically motivated vocationally (Wlodkowski, 1999, p. 12). Initiating vocational intrinsic motivation is therefore of narrow concern here, and is reviewed only briefly, together with initiating academic intrinsic motivation.

With respect to there being a social intrinsic motivation, evidence is presented here for this new motivation to exist in online learning.

Finally, personal intrinsic motivation is reviewed. There are three major categories of intrinsic personal motivation in learning, first identified by

Piaget – of challenge, fantasy, and curiosity (Furth, 1970). These are investigated here in turn, and ways to initiate them are highlighted. In particular, personal intrinsic challenge requires pre-task presentation of fixed learning objectives, or early negotiation of these with each student, or of close moderating by the tutor in the case of emergent objectives. Personal intrinsic fantasy pre-requires the course-writer to convey explicitly the rationale for any course group activity (such as non-authentic online debate), and personal intrinsic curiosity can be initiated through the senses utilising audio and visual effects and multimedia technology, or cognitively through measured feedback by the tutor – to reveal deeper complexity in the task hitherto unforeseen by the student and to facilitate how the student might proceed to deeper understanding. These are discussed in detail below.

THE PROCESS OF EDUCATION

In order to review the intrinsic motivations in studying, the process of education is first given in brief schematic form, then the ways of learning are expounded, followed by the roles of the various types of motivation and how these may be initiated in the student. Throughout this report, it is recognised (according to Wlodkowski, 1999, pp. 5–6) that the quality of the education (referring here especially to the opportunities for various learning interactions) provided is intertwined with the student's ability and the student's motivation, to produce learning. Learning collaboratively in a group, for example, may be intrinsically motivating to some students, while others are de-motivated and prefer 'connected' cooperative learning in a group – perhaps combined with individual study. As will become clear, the various intrinsic motivations are intertwined with the learning opportunities provided by the courseware. One of the avowed aims of higher education, whether face-to-face or online, is the acquisition of critical thinking skills, and increased acquisition has been found to be directly correlated (Anderson & Garrison, 1995) with higher interactivity provided in the courseware – more specifically with the frequency of collaborative student-to-group interactions.

As a basic overview, the following schema (Fig. 1) illustrates the process of distance education (based on the distance teaching in the UK Open University's postgraduate course in Open and Distance Education). The parallel with task-based learning in face-to-face education is noteworthy (for example, see Willis, 1996). This schema was designed from my recent experience

EDUCATION PROVIDER

CONTENT

SUPPORT (= affective motivational support)

general
concepts

student's own
context

goals
(? variable)

+

skills
(learning   +   study)
  skills   skills

to develop students'
strategic competence
for learner autonomy

STUDENT LEARNING

(with focus on
negotiating meaning)

REPORT / TMA

(with explicit focus
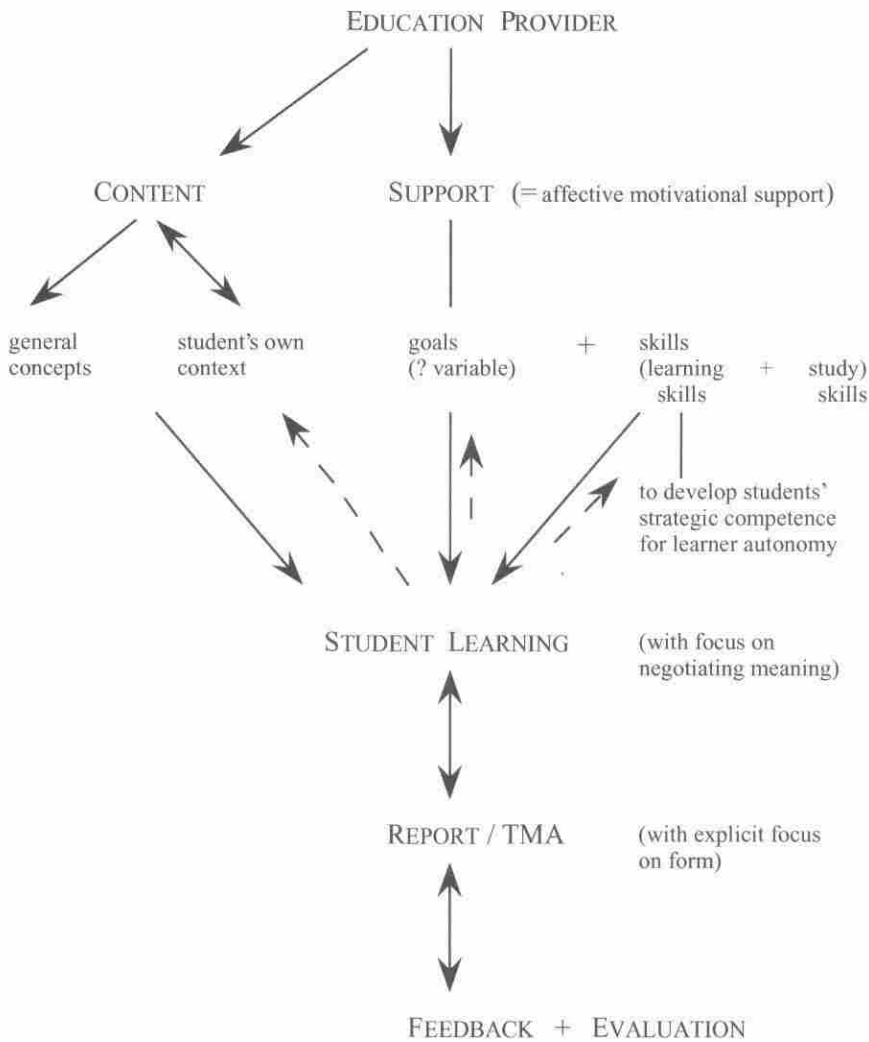on form)

FEEDBACK + EVALUATION

Fig. 1. The process of education.

studying in the UK OU's MA ODE and from my past experience teaching through using task-based learning. It gives a simplified overview of the process of education in which the various interactions and opportunities for learning can be identified to be correlated with specific interventions for each of the intrinsic motivations.

Within this process, student learning takes place through the opportunities provided in the various interactions; student-to-materials, student-to/from-tutor, and student-to-group interactions. The courseware design provides for the opportunities to elicit and bring in the student's own context (for enhancing the relevance of the learning experience for personal meaning making) into the material content to feed into the student learning (see Fig. 1) as student-to-materials interaction, and to bring in tutor feedback from the student's contributions to online conferences and from tutor-marked-assignments (TMAs) as student-to/from-tutor interactions. The courseware design also provides the intellectual space such as in an online asynchronous conferencing site for the central student learning in student-to-group interactions. The various intrinsic motivations are initiated each in their own type of interaction: personal intrinsic challenge for example in the student-to-materials interactivity and personal intrinsic cognitive curiosity in the tutor TMA feedback. These are described in detail later. Also later, the various student interactions alone or in a group are analysed to reveal how these interactions bring about the different types of learning, through reference to constructivist learning theory.

THE LEARNING INTERACTIONS

The different discrete types of learning are first classified as learning-alone or as learning-in-a-group, and these then sub-classified. Each (column in Table 1) of these sub-classified types of learning is next analysed in detail.

Table 1. The Discrete Ways of Student Learning.

Learning-alone		Learning-in-a-group	
Independent	Individual	Interpersonal	
		Cooperative	Collaborative
Freedom over content and method of learning	No freedom over content or method of learning or pre-negotiated freedom	Connected learning Group with a 'knower'	Group with no 'knower'

Learning-Alone
The discrete ways of student learning-alone (Table 1) are 'independent' learning and 'individual' learning. The 'independent' learner alone selects what to learn, when, where, how and why, and may be engaging a teach-yourself book or postal correspondence course. The 'individual' learner, in contrast, is engaging a prescribed syllabus, usually paced and with learning activities to guide the way of learning.

Learning Independently
The learner studying 'independently' is not of central concern to institutional education providers, provided they are aware that a distance student who becomes too isolated might drop out or switch over to studying independently. It is an extreme category, but one that should not be totally ignored.

Learning Individually
Constructivist learning theory explains how a student learns alone through interaction with the materials. The student learns through constructing personal meaning through active questioning and relating the new information to other information and to pre-existing knowledge. (I make careful distinction here between 'information' and 'knowledge': 'information' is not yet learnt or is free-floating cognitively not yet connected to pre-existing knowledge neural networks, while 'knowledge' is so connected and is thus learnt.)

Prior to writing or speaking, an individual reflects on the existing knowledge organisation and learns by making new connections to information, or to other pre-existing knowledge, or by reorganising – that is, de-construction and re-construction for personal meaning. De-construction may occur for example if there is some inconsistency in existing knowledge patterns and information. Reading and listening provide new information, from student-to-materials interaction and from tutor or group interactions. As will become clearer later, learning individually or in cooperative group interactions occurs in the mind of the student alone, and only in collaborative group learning could we argue that the construction process occurs in a shared virtual space.

Learning-in-a-Group
Learning-in-a-group or interpersonal learning (Table 1) is sub-classified according to whether the interactions are 'cooperative' or 'collaborative'.

Learning Cooperatively

Cooperative learning essentially involves at least one member of the group who 'knows' the content soon to be learnt by the other(s). Learning takes place through the 'knower' repeating, reiterating, recapitulating, paraphrasing, summarising, reorganising, or translating the point to be learnt. Cooperative learning succeeds when "a student who does not initially understand . . . is placed in a group with peers who already understand the idea" (Panitz, 1996, p. 11). Jacobs (1998) makes a clear case for the value of learning cooperatively for language acquisition – largely as a consequence of the recycling of the target language to be acquired and the increase in the amount of comprehensible input that each member is exposed to as well as opportunities afforded for practising the new language. Crook (1995) suggests that when learning does take place in cooperative mode, that it is not through the coordinated interactions but rather through an individual cognitive learning process. Webb (1982) reports that the individual learns through verbalising which induces the individual to integrate and reorganise his or her own understanding. Here, the 'knower' is first learning individually in order then to explain to the others.

Discussion of 'connected' learning and my argument that it should classified as 'cooperative' and not 'collaborative' are given in the section on gender differences, below.

Learning Collaboratively

Collaborative learning follows a scientific process of testing out hypotheses. A participant publicly articulates his (or her) own opinion as a hypothesis and being open to the value of conflict allows this to be negated if possible by others, in which case the original participant or another offers up a modified or alternative hypothesis for public scrutiny. In collaborative learning, disagreement and intellectual conflict are desirable interactions (Johnson & Johnson, 1979). All participants share in co-constructing the new knowledge together, and this learning occurs inside the group as a type of consensus achieved through analysis and argument (Crook, 1995, p. 543). In collaborative learning, there was no 'knower' prior to the learning process taking place (in contrast to the situation of 'cooperative' learning).

Related Points

1) Individual learning and collaborative learning share the same characteristic of analytic dialogue – in the former between the learner and the text or content, and in the latter between the learner and other learners (Müller, 1982).

2) An elaborate description of cooperative learning and collaborative learning
    is given by Panitz (1996), which is largely consistent with the above.
    However, his definitions (p. 13) of cooperation as a 'structure of interaction'
    and collaboration as a 'philosophy of interaction' are unnecessarily vague.
    His definitions are expanded by reference to Bruffee (1995, pp. 12–15) who
    explains that cooperative learning is for acquiring foundational content in
    the early stages of education and collaborative learning is for nonfounda-
    tional knowledge "derived through reasoning and questioning versus
    [cooperative learning] rote memory . . . Out of this [collaborative] inquiry
    process, new knowledge is created, something not likely to occur when
    dealing with the facts and information associated with foundational
    knowledge" (Panitz, 1996, p. 15). It is this deep learning through col-
    laborative interactions that is valued in post-secondary education, and it
    is intrinsic motivation that is required for this collaborative deep approach
    to learning.

Preferences to Learning-Alone or to Learning-in-a-Group

Finally, with respect to the various types of provided interaction described
above, there are significant and noteworthy differences in the intrinsic
motivations among these types. In particular, there is a gender difference –
and this is important since lifelong learning, open learning, and distance
learning all set out with their mission to favour hitherto-sidelined women or at
least to offer a level playing field for them. If only-collaborative group
interaction were built into the courseware, this would constitute in large
measure a negative impact on any pre-existing intrinsic motivation, and deny
opportunities for initiating intrinsic motivation in women.

Moreover, most Western-providers of distance education could demon-
strate more inclusivity if they were to be more aware of cultural differences
among their students.

And also there appears to be a difference in need for learning-alone or
learning-in-a-group between students who undertake conventional face-to-
face education and those that are at a distance.

These three considerations are briefly discussed in turn.

Gender Differences in Learning

Gender differences have been identified, with women (with exceptions)
showing so-called right-brain characteristics in empathetic elicitation, sharing
and valuing of each others' experiences and views cooperatively, and with men

(with exceptions) showing so-called left-brain characteristics in analytical argument collaboratively. Lyons, Kysilka, and Pawlas (1999) give a current overview of learners being either 'right-brain' dominant, who are intuitive and prefer informal unstructured learning environments and group discussions, or 'left-brain' dominant, who are analytical, rational and objective. Generally, those who are 'right-brain' dominant are women, while those who are 'left-brain' are men, with the proviso that women are more flexible and can switch from right to left. Belenky et al. (1997) report the cooperative style in (Western) women sharing and borrowing opinions as 'connected' learning. Connected learning was also reported in group cooperative learning by Johnson and Johnson (1979, pp. 9–11) by exposing the individual to different points of view to help gain a more objective understanding through adding together the perspectives from others to one's own. Thus there are the two interpretative processes for learning in a group cooperatively (basically; one through speaking, and the other through listening). One is of reinterpreting one's own understanding cognitively alone in order to subsequently articulate and explain it to others. And the other is of reinterpreting and enriching one's own interpretation by combining it with other perspectives from the group. Connected learning interactivities may thus be at odds with the collaborative scientific process described by Crook (1995, p. 543). In particular, women may be more motivated to learn in groups than men. Women have also been reported to be uncomfortable with men's 'conversational' style and consequently de-motivated in mixed groups in online conferencing (Blum, 1999). Moreover, women have demonstrated more achieving motivation when in a group (under affiliative conditions) than when studying individually (Gralweski & Rodgon, 1980). This increased motivation to learn in a group rather than alone was explained by Bruner (1966) as interpersonal intrinsic motivation as cooperation ('reciprocity' according to Bruner) or as modelling oneself after a role model ('identification' according to Bruner). Both of these are exercised in 'connected' cooperative learning.

Cultural Differences in Learning
Preferences towards learning-alone, cooperatively-in-a-group or collaboratively-in-a-group differ among cultures. In reporting the considerable differences between East and West, Duppenthaler et al. (1989, p. 97) closed by saying that "[Western] teachers must realise that the western preconception of how people learn is not necessarily how Japanese learners learn." The cultural difference in learning preferences is so great between East and West

that in (Western) global online learning programmes there are few if any Japanese participants studying in Japan.

The preferences of Japanese students towards the various learning interactions have been investigated (Kawachi, 2000a). Gender differences in Japanese were also investigated by open-response questionnaire survey and by interviews, and the preliminary findings do not suggest there are any gender differences in Japanese. Japanese men as well as women were discovered to prefer connected cooperative learning, maintaining harmony and seeking consensus through increased dialogue. This was attributed to the Japanese affiliative culture with the highest known ambiguity avoidance (Hofstede, 1980, p. 122). Their reluctance to engage in (left-brain) analytic argument has been suggested to be due to their prowess in right-cerebral visual intelligence caused by dependence on logographs for communicating meaning in the Japanese language which is phonologically the narrowest in the world (see Kawachi, 1999; 2000b). Tobin (1995) also reported that in their interactions, Japanese focused on building social empathy with the others in the group, and not on self-expression.

Japanese especially choose cooperative learning just prior to an examination to provide the opportunity to check with other students just what facts and information need to be memorised in order to pass the examination. These students might benefit from early awareness and acquisition of a wider range of learning strategies. In rare cases, Japanese study individually though in the same place as other students and when they have reached a hypothesis in their own reconstruction of knowledge they then interact with the others to test out their opinion and in so doing learn collaboratively.

Initiation of intrinsic motivations is significantly important for individual learning and for collaborative learning. There is therefore a unique need to initiate personal intrinsic motivation in Japanese generally, in order to promote more successful participation in online learning, not just within Japanese distance education but notably within interactive cross-cultural open learning.

This culturally distinctive need for initiating intrinsic motivation may extend to other Southeast Asian cultures who share fittingness, based on their language form such as Korean and Thai (data not yet available).

Conventional-versus-Distance Differences in Learning
In a think-aloud protocol, Marland, Patching, Putt, and Putt (1990) found that distance students studying individually demonstrated poor quality learning

consistent with their adopting a surface approach (as defined by Marton and Säljö, 1976a, 1976b), while those that studied in a group collaborated to promote deep learning, further suggesting the educational advantage for distance students to study in a group.

THE MOTIVATIONS TO LEARN

This section presents the various intrinsic and extrinsic motivations to learn, discusses the four intrinsic motivations – making the case that there is (the fourth) *intrinsic social* motivation in online learning – and focuses on the various activities in online education for initiating each of the sub-types of intrinsic personal motivation; challenge, fantasy, and curiosity, and their respective further sub-types.

The Intrinsic and Extrinsic Motivations

The Working Definitions of Terms
The current concepts of the various intrinsic and extrinsic motivations to studying derive from the definitions of four different educational orientations reported by Gibbs, Morgan, and Taylor in 1984 (almost 20 years ago) based on student survey data from about 40 years ago. Those students were in traditional face-to-face education, and the transmissibility of these concepts to distance education, computer-mediated communication (CMC) and virtual classrooms has not yet been validated. With respect to adult continuing education, Boshier and Collins (1985; quoted in Deshler, 1996) proposed that there were six adult motivations to engage learning – of social contact, social stimulation, professional advancement, community service, external expectations, and cognitive interest. These can all be subsumed under the categories of Gibbs et al. (1984).

Gibbs et al. (1984, p. 170) quoted from Taylor's unpublished 1983 PhD thesis the discovery of four types of educational orientation – vocational, academic, personal, and social – by Clark and Trow in 1966, that Taylor then divided "into two sub-types according to whether the student was directly interested in the content of the course or whether they were studying the course merely as a means to an end. These sub-types were labelled intrinsic and extrinsic, respectively."

The Case for an Intrinsic Social Motivation in Online Education
Gibbs et al. (1984) went on to discuss the above four types, noting that there was only an extrinsic sub-type of social orientation (1984, p. 177): "Social orientation appears to be extrinsic almost by definition; as it cannot be related to the course itself." In 1983, Taylor related the social motivation to extracurricular club and sports activities. A social dimension (probably intrinsic) was later recognised by Morgan (1993, pp. 39–40) as a motivation in the face-to-face components (such as in group tutorials or residential weekends) of correspondence or open learning courses. As with the other motivations, social motivation has not yet been identified within a group of individuals who interact and learn in a virtual space (provided through CMC technology).

However, Wegerif (1998) has reported the educational need for building a sense of community in asynchronous online learning. This suggests that there might be a social aspect to the motivation of an individual studying online. It should be noted that the utilisation of the virtual 'coffee-shop chat room' (Phillips, 1990) appears to be satisfying a virtual extrinsic (outside of the course content) social motivation of the students – that reduces feelings of isolation, and that may also be involved in developing a community of learning. However, student perceived learning and course satisfaction have been related (Walker & Hackman, 1992) more to the amount of information received (satisfying the intrinsic motivations), than to online rapport with tutors and other students. Indeed, in an objective study of the quality of learning, Boling and Robinson (1999, p. 170) found that students enjoyed their distance learning experience most when the online lecture was supplemented by CMC video conferencing with other students – more than when supplemented by face-to-face cooperative group discussion, and more than when supplemented by only individual study (the control). However, their students through testing showed most learning after the face-to-face group discussion. This indicated that the level of student enjoyment or satisfaction cannot be equated automatically with better quality learning (that there is some trade-off between these), and that social motivations might therefore not be the most successful in terms of the achieved quality of learning.

Considerations of Differences between Intrinsic
and Extrinsic Motivations
Intrinsic motivation is more robust than extrinsic motivation, and is more related to deep quality learning – in which knowledge is cognitively

re-constructed for personal meaning and is long-lasting. For example, the novelty effect is a personal intrinsic motivation based on sensory or technological curiosity and occurs widely and reliably (even in technological illiterates). On the other hand, the interviewer effect, acquiescence effect and Hawthorne effect are personal extrinsic motivations and have a weak reliability in each individual and are less robust. These effects could – depending on each student's personal history – easily and suddenly change to be negative (especially if the student is 'chosen' repeatedly for mundane interviews, questionnaires or other tasks). (In this respect, we are reminded to keep our questionnaires to the students to less than 100 pages if we seek to maintain their complicity.)

Here it should be noted that the technological aspect could elicit an extrinsic as well as an intrinsic personal motivation. But this extrinsic motivation to prove one's own worth to others is fragile and easily reversed by emergent anxiety or frustration with the technology. To prove one's capabilities to oneself, on the other hand, is discussed later under personal intrinsic 'challenge'. It is this personal intrinsic challenge when shared by all members in a group acting as one (without extrinsic competition to prove oneself to others in the group) that drives group cooperative learning. In such a group of students mutually empathetic with each other, emergent anxiety and frustration with the technology (Hara & Kling, 2000) become a common binding force that unifies them into a community of learning.

Initiating Each of the Four Intrinsic Motivations

Initiating Vocational and Academic Intrinsic Motivations

Both vocational intrinsic motivation (acquiring skills relevant to own future desires) and academic intrinsic motivation (pursuing own intellectual interests) can be initiated through the 'expressiveness' of the online tutor giving vicarious experience of relevance to the student (Hodgson, 1997, p. 168). Brown (1987, p. 286) first identified 'expressiveness' as one of the two key qualities of a lecturer in the face-to-face transmission process (the other key quality was 'clarity') and defined expressiveness as consisting of enthusiasm, friendliness, humour, dynamism, and charisma. The teacher conveying expressiveness has been correlated with students' higher academic grades (Abrami, Leventhal, & Perry, 1982) through influencing the student's response to the teacher and through influencing the student's attitude to the subject (both of which are important avowed long-term aims of the educative

process). The vicarious experience is either received relevance of an example or illustration (rather than of an underlying issue) pertinent to the student's own life (seeding vocational intrinsic motivation), or is transfer of the student's mind to see the subject through the tutor's eyes to experience the tutor's own passion towards the subject (seeding academic intrinsic motivation). This tutor expressiveness for initiating vicarious experience in the student has been described by Thorpe (1999, p. 70) and by Gunawardena and Zittle (1998, p. 108) as the tutor's emotional presence or online 'social presence'. Also, Hart (1996) asserted that, "if the [web-based online] teacher demonstrates a love of the subject, this transcends to the students."

Initiating Social Intrinsic Motivation
In the case of virtual learning, there may be effective social intrinsic motivation. Where each participating student is separated from other students and where the students meet each other only online inside a virtual classroom, then the subsequent group learning interactivities are so important and so significantly desirable that we must now consider such online education to have the potential for initiating a social intrinsic motivation.

A major factor in distance education related to students not succeeding to learn has been the individual distant student feeling isolated – without other students to turn to for support (Abrahamson, 1998; Brown, 1996; Twigg, 1997). However, in online education, there is the potential for a student to develop the sense of belonging to a group of students. This potential is facilitated by the CMC technology that allows for student-to-student pair-wise interactions and by the course designers building in opportunities for student-to-other-students interactions within the group. Wegerif (1998) has stressed the importance of this social aspect to learning online: he reports the necessity of developing a sense of community to enable effective learning to take place – a community in which the individual initially as an outsider develops a self-identity as an insider within the group.

The development of a 'community of learning' online does not necessarily need to be based on shared learning: the sense of community has also been identified as developed through shared frustrations and anxieties (Hara & Kling, 2000).

Initiating Personal Intrinsic Motivation
Among vocational, academic, personal, and social motivations, the personal intrinsic motivation may be educationally the most effective and most

desirable. Personal intrinsic motivation is fuelled by the student's desire towards self-improvement (cf. extrinsic to prove one's capability to others). According to Piaget for a student learning alone as an individual, there are three major categories of personal intrinsic motivation – challenge (the will to achieve mastery), curiosity (choosing the most informative rewarding context), and fantasy (assimilating the given information using schema from other contexts; Furth, 1970), and these have been identified in popular computer games (Malone, 1981, p. 356). These three categories of intrinsic personal motivation can operate if the student has the freedom to choose the learning activities, without external pressures – and exercising this freedom itself constitutes academic intrinsic motivation (following one's own interest). It should be noted that in individual study the student rarely has full freedom of choice with respect to either content or method of learning. In such case, as well as in cases where group activities such as online debate are prescribed, these three categories of personal intrinsic motivation may be subverted (Fulford & Zhang, 1995, pp. 57–58). The courseware and tutor activities for initiating each of these sub-types challenge, fantasy, and curiosity, (each with their respective further sub-types), are given below.

Initiating personal intrinsic motivation: challenge   To initiate 'challenge', the objectives specifying what the student will be able to do, or do better, as a result from learning should be stated explicitly at the outset (Rowntree, 1994, pp. 49–58, p. 146). (These objectives could be discovered and then agreed upon through negotiations with the student.) Since these objectives need to be personally meaningful to the student, the student's own context should be elicited and involved, or one to which the student can sufficiently relate to and identify with. While objectives in the early stages of a course may be fixed in order to assure the course quality, objectives or goals in the later stages may be emergent – that is, they develop from the student's interactions with the early content and are moderated by the tutor (as may be the case for an externally-examined thesis). This close monitoring with frequent and timely feedback from the tutor as guide and moderator tailors the difficulty level to the student who might otherwise challenge an over-ambitious and thus unattainable goal. (As well as moderating the difficulty level for 'challenge' in emergent goals, feedback also tailors the complexity for 'curiosity' – discussed below.) An emergent goal could involve the student disseminating and publishing her/his own research findings in a suitable forum of appropriate difficulty level advised by the tutor.

In cases where the course is pre-designed and pre-packaged, and there is low interactional dialogue provided between the student and tutor, then multiple levels of difficulty must be offered from which the student can choose in order to assure that the difficulty level of the learning task is at an optimal level for the student. Individual choice is necessary here to self-protect against loss in self-esteem and to stimulate growth in self-esteem through self-tailored achievable successes (Weiner, 1992). Moreover, multiple levels of difficulty would be required for accommodating the diversity among a range of students.

In a curriculum based on the ideas of Ausubel (see e.g., Ausubel & Robinson, 1969; Marland & Store, 1993) in which there is a series of tasks designed into the courseware usually of increasing difficulty in that they must be done in the set order – such as involving a series of tutor-marked-assignments (TMAs) – the level of challenge needs to be raised each time to initiate intrinsic motivation. Pacing by pre-setting deadlines for each TMA in the series is a customary technique for controlling the difficulty level, and this is usually with some individual flexibility for the tutor to more-finely tailor (i.e., reduce to match) the difficulty to the individual student. The various types of challenge have been sub-classified as 'steady', 'recurrent', 'sporadic', or as 'one-shot' by Eifferman (1974). In my interpretation, for optimal 'steady' challenge, the initial difficulty is raised and the outcome raised. For less-than-optimal 'recurrent' challenge, the initial difficulty is raised but the outcome is kept at the same level. For (less effective as motivating) 'sporadic' challenge, there is low initial difficulty and a fixed outcome. Student-to-materials interaction using a surface approach to study-ing would fall into this category. And for 'one-shot' challenge such in a dissertation track where the student is not expected to re-visit the course, the initial difficulty is set very high and the outcome is fixed (as institutionally criterion referenced). When 'one-shot' challenge is set by the courseware, the initiated personal intrinsic motivation may quickly be dissipated and lost (e.g., through lack of institutional support to the student), with extrinsic (achieving) motivations being the only substitute preventing drop-out (extrinsic academic to get the qualification, or extrinsic personal to prove one's worth to others). Needless to say, educational providers would seek to negotiate with the individual student the difficulty level at the outset, and then utilise tutor feedback regularly to initiate (and promote) personal cognitive-curiosity intrinsic motivation (discussed below) to best support the student in a dissertation track.

Initiating personal intrinsic motivation: fantasy Generally, education is concerned with only intrinsic fantasy – that is, fantasy in which the student's activity brings about the learning objectives – rather than with extrinsic fantasy in which the result is outside the course content.

To initiate (intrinsic) fantasy, the courseware must show how the learning or skills achieved in the fantasy can be applied to the student's advantage in new contexts in the student's real world. This translates to a need for the course-writer to share with the student(s) the rationale for each activity (for example, the rationale why the students should participate in a non-authentic group online debate). Providing a rationale is especially important in the case of the isolated distance student who does not yet have a fully developed own context in which to test out and apply immediately the learning achieved by the activity.

Also, in the case of faraway students, their context for learning (for constructing personal meaning with the content materials) can be considerably different from that envisioned by the courseware writers. No initiation of intrinsic fantasy – a lack in the perceived relevance of the learning task, or a very low ratio of perceived benefit to expended effort – can lead to the student slowing down or dropping out (Rowntree, 1992, p. 72; Sherry, 1996, p. 8). It is important for the sake of initiating personal fantasy intrinsic motivation, therefore, that the faraway students' needs be elicited and brought into the materials at the outset and during the course (since needs develop and change) for courseware quality assurance. Two quotations follow that should exhort (Western) distance education providers and their courseware writers to bring in more faraway regional experts for inclusivity necessary for global quality and equality assurance; "No picture can be considered final when the perspectives and narratives of so many are missing, distorted, or subordinated to self-serving dominant majority interests," (Lincoln & Denzin, 1998, pp. 419–420), and "Any consideration of quality assurance in open and distance learning in an international context must remember that what Baumeister terms the 'Anglo-American educational environment' does not represent the whole picture," (Tait, 1997, p. 4). It is also to be remembered that eliciting the faraway student's needs can help to inform the tutor choosing relevant examples or illustrations to include into feedback to give vicarious experience to the student and thereby initiate vocational intrinsic motivation (discussed above).

Initiating personal intrinsic motivation: curiosity There are two types of curiosity in personal intrinsic motivation – sensory curiosity and cognitive curiosity (Malone, 1981, p. 362).

To initiate sensory curiosity, the educational designer should utilise the audio and visual potential of the technological media. In print form, this involves page design with careful balance of text and images. In CMC, audio can be added to interactive graphics on web-pages. Some major Western education providers have adopted theme-music as background audio to their web-sites, while other major providers are silent. The audio and visual potential of technological media includes, of course, the use of pre-recorded audiocassette and videocassette tapes and of audiovisual CD-rom to students (Kirkwood, 1994, pp. 64–65). These can initiate sensory curiosity. Seeing or hearing the distance tutor can be extremely intrinsically motivating for some students whose preferred learning style is field dependent. Some distance learning software adopt synchronous visual potential (e.g., the CUSeeMe software) which has been found to be intrinsically motivating (unpublished personal data). It should also be remembered that seeing and hearing the tutor can also help to convey the 'expressiveness' of the tutor (or of other relevant persons, e.g., in a video-clip of a famous professor in cross-reference with the courseware) to initiate academic intrinsic motivation (discussed above).

To initiate cognitive curiosity, feedback from the tutor to the student should reveal an outcome from the student's thinking unforeseen by the student that cognitively surprises the student, and which on self-reflection can be accepted by the student. In this self-reflection, the student accepts his/her own knowledge structure was incomplete, or perhaps inconsistent. The tutor's feedback is measured tailored to the student's cognitive profile to reveal inconsistency and to facilitate how the student might move to improve his/her understanding. The educational feedback must be constructive. This technique systematically to expose gaps in learning and then to facilitate reparative further learning has been identified as an important tutoring strategy by Collins and Stevens (1981). The theory here for the tutor tailoring the question individually to each student for discovering deeper understanding using increasingly deeper complexity is closely related to Bruner's spiral curriculum and his concepts of constructivist learning (Bruner, 1966).

Occasionally distance students want or would have liked to see, at the outset of the task, samples of an assignment to gauge the product quality required. Indeed, acculturation of the new student into the formal culture of the academic discourse could be facilitated, for example, by providing access to archived transcripts of online learning interactions. The invisible danger here is that while the objectives are clarified in terms of difficulty levels for challenge, the degree of complexity may also be disclosed by archived online

tutor interactions or by providing access to the best (adequate in terms of complexity) assignment samples. The curiosity of the new student cannot then be initiated by tutor feedback on complexity. Face-to-face teachers and online tutors alike should be aware that revealing the required complexity in addition to showing the difficulty levels during the early presentation of the learning objectives lays waste to the potential of later feedback on complexity for initiating intrinsic curiosity motivation.

SUMMARY

The present review has provided a comprehensive though thin coverage of what we are currently doing to initiate intrinsic motivation, especially in open and distance education. A thicker coverage should include more examples and vignettes for readers to draw parallels to their own practice. Here, the theory behind various practices has been given, and this should serve to inform and improve current practice. Moreover, it is premature to say whether all the practices for initiating intrinsic motivations described here are undertaken yet by all open and distance education providers. Accordingly, most education providers may find one or more of these practices yet to be implemented in their context, and the theoretical basis with detailed references to the literature for these practices given here should promote their wider adoption. "Terminus a quo."

ACKNOWLEDGEMENT

REFERENCES

Abrahamson, C.E. (1998). Issues in interactive communication in distance communication. *College Student Journal, 32*, 33–43.
Abrami, P.C., Leventhal, L., & Perry, R.P. (1982). Educational seduction. *Review of Educational Research, 52*, 446–464.
Anderson, T.D., & Garrison, D.R. (1995). Critical thinking in distance education: Developing critical communities in an audio teleconferencing context. *Higher Education, 29*, 183–199.

Ausubel, D.P., & Robinson, F.G. (1969). *School learning: An introduction to educational psychology.* New York: Holt, Rinehart and Winston.

Belenky, M.F., Clinchy, B.M., Goldberger, N.R., & Tarule, J.M. (1997). *Women's ways of knowing: The development of self, voice and mind.* (Tenth Anniversary edition). New York: Basic Books.

Blum, K.D. (1999). Gender differences in asynchronous learning in higher education: Learning styles, participation barriers and communication patterns. *Journal of Asynchronous Learning Networks, 3.*

Boling, N.C., & Robinson, D.H. (1999). Individual study, interactive multimedia, or cooperative learning: Which activity best supplements lecture-based distance education? *Journal of Educational Psychology, 91,* 169–174.

Boshier, R.W., & Collins, J.B. (1985). The Houle Typology after 22 years: A large scale empirical test. *Adult Education, 35,* 113–130.

Brown, G.A. (1987). Higher education: Lectures and lecturing. In M.J. Dunkin (Ed.), *The international encyclopedia of teaching and teacher education* (pp. 284–288). Oxford: Pergamon.

Brown, K.M. (1996). The role of internal and external factors in the discontinuation of off-campus Students. *Distance Education, 17,* 44–71.

Bruffee, K.A. (1995). Sharing our toys: Cooperative learning versus collaborative learning. *Change, 1,* 12–18.

Bruner, J.S. (1966). *Toward a theory of instruction.* Cambridge, MA: Belknap – Harvard University Press.

Chambers, E. (1994). Assessing learner workload. In F. Lockwood (Ed.), *Materials production in open and distance learning* (pp. 103–111). London: Paul Chapman (Sage).

Clarke, B.R., & Trow, M. (1966). The organizational context. In T.M. Newcombe & E.K. Wilson (Eds.), *College peer groups.* Chicago: Aldine Press.

Collins, A., & Stevens, A.L. (1981). Goals and strategies of inquiry for teachers. In R. Glaser (Ed.), *Advances in instructional technology* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum.

Crook, C. (1995). On resourcing concern for collaboration within peer interactions. *Cognition and Instruction, 13,* 541–547.

Deshler, D. (1996). Participation: Role of motivation. In A.C. Tuijnman (Ed.), *International encyclopedia of adult education and training* (2nd ed., pp. 570–575). Oxford: Pergamon Elsevier.

Duke, C. (1996). Adult tertiary education. In A.C. Tuijnman (Ed.), *International encyclopedia of adult education and training* (2nd ed., pp. 627–631). Oxford: Pergamon Elsevier.

Eifferman, R.R. (1974). It's child play. In L.M. Shears & E.M. Bowers (Eds.), *Games in education and development.* Springfield, IL: Charles C. Thomas.

Entwistle, N.J. (1979). *Motivation, styles of learning and the academic environment.* Edinburgh: University of Edinburgh Press. ERIC Document Reproduction Service No ED 190 636.

Fransson, A. (1977). On qualitative differences in learning: IV Effects of intrinsic motivation and extrinsic test anxiety on process and outcome. *British Journal of Educational Psychology, 47,* 244–257.

Fulford, C.P., & Zhang, S. (1995, May). Interactivity in distance education television: A constructed reality. In C.C. Gibson (Ed.), *Distance education symposium 3: Learners and learning* (pp. 52–60). Pennsylvania State University, PA: ACSDE Research Monograph Number 13.

Furth, H.G. (1970). *Piaget for teachers*. Englewood Cliffs, NJ: Prentice-Hall.

Gibbs, G., Morgan, A., & Taylor, E. (1984). The world of the learner. In F. Marton, D. Hounsell, & N.J. Entwistle (Eds.), *The experience of learning* (pp. 165–188). Edinburgh: Scottish Academic Press.

Gralweski, C., & Rodgon, M.M. (1980). Effects of social and intellectual instruction on achievement motivation as a function of role orientation. *Sex Roles, 6*, 301–309.

Gunawardena, C.N., & Zittle, R.H. (1998). Faculty development programmes in distance education in American higher education. In C. Latchem & F. Lockwood (Eds.), *Staff development in open and flexible learning* (pp. 105–114). London: Routledge.

Hara, N., & Kling, R. (in press). Students' distress with a web-based distance education course. *Information, communication & society* [On-line]. Available: http://www.slis.indiana.edu/CSI/wp00-01.html [earlier version available on-line at http://www.firstmonday.dk/issues/issue4_12/index.html]

Hart, G. (1996). Creating an online teaching space. *Australian Journal of Educational Technology, 12* [On-line]. Available: http://cleo.murdoch.ed.au/gen/aset/ajet/ajet12/su96p79.html

Hodgson, V. (1997). Lectures and the experience of relevance. In F. Marton, D. Hounsell, & N.J. Entwistle (Eds.), *The experience of learning* (2nd ed., pp. 159–171). Edinburgh: Scottish Academic Press.

Hofstede, G. (1980). *Culture's consequences*. Newbury Park, CA: Sage.

Jacobs, G.M. (1998). Cooperative learning or just grouping students: The difference makes the difference. In W.A. Renandya & G.M. Jacobs (Eds.), *Learners and language learning* (pp. 172–193). Anthology Series 39, Singapore: SEAMEO RELC.

Johnson, R.T., & Johnson, D.W. (1979). Conflict in the classroom: Controversy and learning. *Review of Educational Research, 49*, 51–70.

Kawachi, P. (1999, April 19–21). *Language curriculum change for globalisation*. Paper presented at the 34th Annual RELC Seminar – Language in the Global Context: Implications for the Language Classroom. Singapore: SEAMEO RELC.

Kawachi, P. (2000a). *Why the sun doesn't rise: The impact of language on the participation of Japanese students in global online education*. Unpublished MA ODE Thesis, Open University, Milton Keynes UK. Available from the author by email < kawachi@kurume-shinai.ac.jp>

Kawachi, P. (2000b). The interactions between personality and cultural differences among learners in global distance education. *Indian Journal of Open Learning, 9*, 41–62.

Kember, D., & Leung, D.Y.-P. (1998). The dimensionality of approaches to learning: An investigation with confirmatory factor analysis on the structure of the SPQ and LPQ. *British Journal of Educational Psychology, 68*, 395–407.

Kirkwood, A. (1994). Selection and use of media for open and distance learning. In F. Lockwood (Ed.), *Materials production in open and distance learning* (pp. 64–71). London: Paul Chapman (Sage).

Lincoln, Y.S., & Denzin, N.K. (1998). The fifth moment. In N.K. Denzin, & Y.S. Lincoln (Eds.), *The landscape of qualitative research* (pp. 407–429). Thousand Oaks, CA: Sage.

Lyons, R.E., Kysilka, M.L., & Pawlas, G.E. (1999). *The adjunct professor's guide to success: Surviving and thriving in the college classroom*. Needham Heights, MA: Allyn & Bacon.

Malone, T.W. (1981). Toward a theory of intrinsically motivating instruction. *Cognitive Science, 4*, 333–369.

Marland, P.W., Patching, W., Putt, I., & Putt, R. (1990). Distance learners' interactions with text while studying. *Distance Education – An International Journal, 11.*

Marland, P.W., & Store, R.E. (1993). Some instructional strategies for improved learning from distance teaching materials. In K. Harry, M. John, & D. Keegan (Eds.), *Distance education: New perspectives* (pp. 137–156). London: Routledge.

Marton, F., & Säljö, R. (1976a). On qualitative differences in learning, I: Outcome and process. *British Journal of Educational Psychology, 46,* 4–11.

Marton, F., & Säljö, R. (1976b). On qualitative differences in learning, II: Outcome as a function of the learner's conception of the task. *British Journal of Educational Psychology, 46,* 115–127.

Morgan, A. (1993). *Improving your students' learning: Reflections on the experience of study.* London: Kogan Page in association with the IET Open University.

Müller, K. (1982). Individual and group work in distance studies: Which process for what purpose? In J.S. Daniel, M.A. Stroud, & J.R. Thompson (Eds.), *Learning at a distance: A world perspective* (p. 106). Edmonton: Athabasca University, International Council for Correspondence Education.

Panitz, T. (1996). *A definition of collaborative vs cooperative learning* [On-line]. Available: http://www.lgu.ac.uk/deliberations/collab.learning/index.cgi

Phillips, C. (1990). Making friends in the 'electronic student lounge'. *Distance Education – An International Journal, 11.*

Rowntree, D. (1992). *Teaching through self-instruction: How to develop open learning materials* (Rev. ed.). London: Kogan Page.

Rowntree, D. (1994). *Preparing materials for open, distance and flexible learning: An Action guide for teachers and trainers.* London: Kogan Page, in association with the Institute of Educational Technology, Open University.

Sherry, L. (1996). Issues in distance learning. *International Journal of Educational Telecommunications, 1,* 337–365 [On-line]. Available: http://www.cudenver/~lsherry/pubs/issues.html

Svensson, L. (1977). On qualitative differences in learning: III – Study skill and learning, in the symposium: Learning processes and strategies – III. *British Journal of Educational Psychology, 47,* 233–243.

Tait, A. (1997). International perspectives on quality in open and distance learning: The importance of context. In A. Tait (Ed.), *Perspectives on distance education: Quality assurance in higher education: Selected case studies* (pp. 1–8). Vancouver, BC: Commonwealth of Learning.

Thorpe, M. (1999). *Learner support – Planning for people and systems.* Overview Essay, H804 Course Guide Block 3. Milton Keynes: UK Open University.

Tobin, J. (1995). The irony of self expression. *American Journal of Education, 103,* 233–258.

Twigg, C.A. (1997). *Is technology a silver bullet?* Educom Review, March/April, 28–29 [On-line]. Available: http://www.educause.edu/pub/er/review/reviewArticles/31228.html

Walker, K., & Hackman, M. (1992). Multiple predictors of perceived learning and satisfaction: The importance of information transfer and non-verbal immediacy in the televised course. *Distance Education – An International Journal, 13.*

Webb, N.M. (1982). Group composition, group interaction and achievement in small groups. *Journal of Educational Psychology, 74,* 475–484.

Wegerif, R. (1998). The social dimension of asynchronous learning networks. *Journal of Asynchronous Learning Networks*, 2 [On-line]. Available: http://www.aln.org/alnweb/journal/vol2_issue1/wegerif.htm

Weiner, B. (1992). *Human motivation: Metaphors, theories, and research.* Thousand Oaks, CA: Sage.

Willis, J. (1996). *A framework for task-based learning.* Essex: Addison Wesley Longman.

Wlodkowski, R.J. (1999). *Enhancing adult motivation to learn, revised edition, a comprehensive guide for teaching all adults.* San Francisco, CA: Jossey-Bass.