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The importance of establishing relevance in motivating student learning

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ABSTRACT This article reports findings from a study which interviewed 36 undergraduate students about aspects of the teaching and learning environment which motivated or demotivated their study. It was found that students were motivated by a teaching environment characterized by eight main elements. This article reports in detail on the element of establishing relevance, as this seemed very important to the interviewees. The interviewees found that teaching abstract theory alone was demotivating. Relevance could be established through: showing how theory can be applied in practice, establishing relevance to local cases, relating material to everyday applications, or finding applications in current newsworthy issues. The traditional building block curriculum, which devotes substantial parts of initial courses to basic theory, could demotivate students if they could not see how the theory was applicable to the discipline or profession. The problem could be alleviated by a course which revealed a curriculum map showing the application of basic material in more advanced courses, or by early periods of exposure to professional practice in professional programmes. Professional programmes faced a double-edged sword with respect to relevance in that it could be established by demonstrating that material was relevant to a future career. However, students could easily become demotivated if they could not see the relevance of theoretical material, since they had chosen a professional programme in the expectation that it would prepare them well for their future career.

KEYWORDS: *abstract theory, curriculum development, motivation, relevance*

Relevance and motivation

One of the most common questions academics ask of educational developers is how to motivate students in their learning. Many also make observations

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that forms of motivation have changed with the onset of mass higher education and the introduction of fees for students. Attempting to answer such questions and concerns is not an easy task for an academic developer. There is an abundant literature on motivation. However, this actually makes the task of giving advice more difficult as it is not obvious which parts to select, particularly when conclusions are conflicting. Much of the work is derived from theory, and the large majority of the empirical studies were conducted on school students or in the workplace. It is, therefore, often not clear how relevant conclusions are for higher education. The following review of the motivation literature will be restricted to work pertinent to the topic of relevance, which is the subject of this article.

There is support for the importance of establishing relevance from two studies of award-winning teachers. Ballantyne et al. (1997) produced a set of stories from 44 award-winning Australian academics. A subsequent analysis of prominent themes from the stories (Ballantyne et al., 1999) found that showing the relationship between theory and practice was the most common. The second study was based upon interviews with 62 award-winning teachers in Australia and Hong Kong (Kember with McNaught, 2007). Analysis of the interviews resulted in ten principles of good teaching. One was devoted to the importance of showing relevance. There were four ways in which the award-winning teachers had been able to do this and examples are given of each. Another qualitative study was by Hodgson (1984), who conducted a study of students' experiences of learning from lectures. She observed extrinsic, intrinsic and vicarious experiences of relevance. An extrinsic experience of relevance occurred when a student made notes without thinking seriously about the concept or thought about it purely in terms of a task which had to be completed. Intrinsic experiences of relevance occurred when students thought about concepts in terms of their own experiences or personal knowledge frameworks. Vicarious experiences of relevance occurred when students saw the content from the lecturer's perspective either because they perceived the lecturer's interest or enthusiasm for the topic or because they identified with a lecturer's example or illustration of a concept. Hodgson's (1984) work is of interest in that it suggests that students can react in different ways to a particular context. However, it also shows that it is possible for teachers to motivate students through utilizing their own interest and enthusiasm and by drawing upon their own experiences. The results of the study provide an incentive to pursue further the subject of motivation through establishing relevance.

Breen and Lindsay (2002) conducted a questionnaire-based study of student motivation in eight programmes in one university. They found

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differences between the percentage of variance in student performance explained by three types of motivation: goal types, sources of enjoyment and general motivation to learn. With one exception, the individual programmes showed higher percentages of explained variance than when results for the programmes were combined. Breen and Lindsay (2002) discussed the results in terms of disciplinary differences. However, there was only one programme for each discipline and no obvious pattern of relationship between similar disciplines. The data were also entirely consistent with being interpreted as resulting from differences in the teaching and learning environments between programmes.

In what started out as a theoretical model, Keller (1983) proposed an instructional design theory which explicitly addressed learner motivation and included relevance. The model proposed four motivational conditions; namely interest, relevance, expectancy and satisfaction. In the model 'relevance refers to the learners' perception of personal need satisfaction in relation to the instruction, or whether a highly desired goal is perceived to be related to the instructional activity' (p. 395). The model has subsequently been called the ARCS model (Keller, 1987; Keller and Suzuki, 2004) based on the acronym; *attention, relevance, confidence* and *satisfaction*. The explanation for the inclusion of relevance was that 'it is also necessary for learners to perceive the instructional requirements to be consistent with their goals, compatible with their learning styles and connected to their past experiences' (p. 231). It is noticeable that both explanations for the inclusion of relevance in the model refer to the relevance of goals. In the other work, referred to here, relevance was interpreted primarily in terms of content.

There are also two forms of learning which could be seen as contributing to establishing relevance but which are also constructs in their own right. Situated learning (Lave and Wenger, 1990; McLellan, 1995) argues that learning occurs best if it is in a context and culture in which it normally occurs. Relevance is, therefore, a necessary condition for situated learning, but additional considerations apply, particularly the need for learning to take place within an appropriate social context. As a result classroom-based learning has commonly been seen as the antithesis of situated learning, so the concept has most often been applied to scenarios other than higher education. Case-based teaching and problem-based learning (which utilizes cases) must also be seen as pertinent to relevance as these forms of learning involve the use of realistic cases, commonly describing typical scenarios met by professionals in the field. Use of such cases can be expected to establish relevance, though there are normally additional reasons for the adoption of these forms of learning, such as the development of generic capabilities or the desirability of taking a multidisciplinary perspective.

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There is certainly an abundant literature on motivation, but limited reference within it to establishing relevance as a prominent theme. There is also a literature related to relevance, but the principal focus of this is often towards topics other than motivation. There is sufficient work to suggest that establishing relevance could be an effective way to motivate student learning, but insufficient to clearly establish a firm conclusion. There is also a lack of guidelines on how to design curricula and conduct teaching in a way which would enhance motivation through establishing relevance. The aim of this study was rather broader. It was to characterize teaching and learning environments capable of motivating or demotivating student learning.

Method

In order to characterize teaching and learning environments capable of motivating or demotivating student learning, it would be necessary to develop reasonably detailed insights into curricula and teaching and learning environments, which implied examining a limited number of cases. Accordingly nine undergraduate programmes in three Hong Kong universities were selected and four third-year students from each were interviewed. The third-year students would be able to look back and report on most of their undergraduate degree. Four students from each programme examined were individually interviewed to provide a comprehensive insight and to give a degree of corroborating validity to the findings.

The three universities were representative of the three types of university in Hong Kong: research intensive, former polytechnic and former liberal arts college. The nine programmes were selected so as to represent a wide range of disciplines. The nine disciplines selected are listed in Table 1. A code follows the name of the discipline. The codes are used in this article to identify the source of the quotations interspersed in the text. The number following the discipline code distinguishes the four interviewees from each programme.

The interviews contained a section in which the students were asked to describe typical approaches to teaching in their programme, the learning tasks they were assigned and the nature of their curriculum. They were also asked to comment on the effect upon their motivation of the described teaching and learning environment.

All interviews were conducted in Cantonese. Full English transcripts of all interviews were then produced. Analysis followed the principles of grounded theory (Glaser and Strauss, 1967; Lincoln and Guba, 1985; Strauss and Corbin, 1990) by searching the transcripts for common themes or categories, in this case factors which motivated or demotivated

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Table 1 **Representative disciplines**

Discipline	Code
Business	BUSS01–BUSS04
Chemistry	CHEM01–CHEM04
Communication	COMM01–COMM04
Engineering	MENG01–MENG04
Hotel & Tourism Management	HTM01–HTM04
Mathematics	MATHS01–MATHS04
Occupational Therapy	OT01–OT04
Pharmacy	PHAR01–PHAR04
Social Work	SW01–SW04

the students in their learning. Themes were originally coded with marginal notes and then with NVivo software (Nvivo, 2000).

The second level of analysis was to use the NVivo coding to extract all material coded in categories associated with relevance. This body of material was then re-examined for subsidiary themes.

Results

Analysis of the transcripts for main factors which motivated student learning identified eight principal facets of a teaching and learning environment. They were: establishing relevance, establishing interest, allowing choice of courses so that interest can be followed, learning activities, teaching for understanding, assessment of learning activities, close teacher–student relationships and sense of belonging between classmates. Of these, establishing relevance was the most prominent factor in terms of the number of times the category was cited and the amount of attention paid to it within interviews. This article, therefore, concentrates upon the results from the study pertinent to enhancing motivation through establishing the relevance of what is taught. The results pertinent to the remaining seven facets of a motivating teaching and learning environment will be reported elsewhere. The remainder of this results section is organized according to the themes and subthemes which emerged from the second level of analysis on the material in the transcripts pertinent to relevance. These themes represent aspects of curriculum design and method of teaching pertinent to establishing relevance and thereby motivating student learning. Extensive use is made of typical quotations to substantiate the conclusions and illuminate the findings in order that readers will be able to put them into practice.

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Demotivating effect of abstract theory

The antithesis of establishing relevance is teaching abstract theory. One of the most common reasons given for lack of motivation was that teaching was purely abstract or confined to theory.

> I dislike inorganic chemistry for it is too abstract. (CHEM04)

As NVivo software was used to record the coding categories, it was possible to examine the incidence of particular themes. Comments about abstract theory were made by 21 out of 36 interviewees. This figure is interpreted as a high incidence in itself, but is very likely to be an underestimate. The coding of the transcripts was undertaken as a search for common and significant themes. Sections of the transcripts were, therefore, not coded and would not have shown up in the search. It is also possible that interviewees held similar views on this topic, but did not mention them in the interview. The interview schedule was kept open to avoid leading interviewees towards particular positions. The consequence of this safeguard is that topics may not be raised.

> At the moment, I am learning some theories which are not that practical. (COMM02)

It was not just that the abstract theory aroused little interest, it was also hard to understand in many cases. Without seeing an application which put the theory in context it became hard to grasp the meaning. It was also more difficult to frame suitable questions to advance understanding.

> If the content is abstract or difficult, we may not be able to understand and we all just sit there. We may not be able to ask questions as we are not sure about what we got. We hesitate as we are afraid of asking inappropriate questions. (COMM03)

Applying theory

Being given the chance to apply theory gives students a chance to see whether they understand it. Application also demonstrates how the theory is relevant.

> For example, finance management involves lots of content related to accounting; like balance sheet or cash flow. After having the lecture, we have to do some practical exercises. If we are unable to work it out, we can raise questions. I think I can learn from this practical way of teaching. (HTM03)

The above example is of a small-scale application in the form of an exercise or problem. The quotation below illustrates a larger-scale application in which a body of theory is applied to the type of activity which professionals in the field would engage in.

> We learn lots of marketing theories, and then we have to base on these theories to … How can I explain this? Building up on the top of these theories,

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we are able to create our views. For example, we are told to run a business through application of the theories. In between, we are allowed room for creativity in doing this particular project. I quite like that. (HTM04)

Establishing relevance of topics

The preceding section has shown that if purely abstract theory is taught students lose motivation. If teachers wish to motivate their students' learning they need to find ways to show the relevance of topics included in their courses. If relevance was established students took an interest in the topic. Establishing relevance and stimulating intrinsic interest seemed to be intimately related. There were some examples from the interviews of ways in which relevance and interest had been established. There were also some negative comments which showed how relevance and interest might have been achieved.

Relevance to local issues

Textbooks normally come from the USA or the UK. Any examples in them are normally of the country in which they were written. It must seem to Hong Kong students that both theory and applications come from Western countries. It is therefore a good way to establish relevance by showing that theory applies to local issues.

> Maybe it is good to open some new programmes especially related to Asian cities. For example, casinos are famous in Macau but we don't have any courses about it. I think that is better to include some elements peculiar to Asian cities. (HTM01)

Relevance to everyday applications

Another way of establishing the relevance of topics was to relate them to applications in everyday life. The chemistry student quoted below wanted to know how chemicals and chemical reactions were used in daily life.

> I think it is important to relate chemistry to daily life and that it has to be applicable to our daily life. (CHEM03)

Occupational therapists spend their working time designing treatment plans. A course which focused on cases taken from everyday working experience would therefore seem relevant to students.

> Comparatively, we had more group work in the second semester. We had had some cases, case illustration. Based on the information provided, we had to design the treatment plan. We analysed a case by referring to the performance components. (OT01)

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The case below is a negative example of how mathematics can seem to be a theoretical rather than a practical subject if relevance is not established. Unless practical applications are explained, mathematics becomes an exercise in learning procedures for performing seemingly pointless calculations. Some readers may know that logarithms and tangents do have practical applications, but they had not been illustrated to the student quoted below.

> Learning is definitely not how many theories that you can memorize. The most important is applying what you have learned in your daily life. In secondary school, we learned something called log and tangent in maths. At the time we were learning that we were able to do the calculations. However, I am sure most of the students who do not pursue their study in maths will soon forget that. We are unable to put them into a real life context. Perhaps we have to learn these things in order to fulfil the requirement of the syllabus. I wonder how important they are to me now. (BUSS01)

Relevance to current topics

The quotation below makes an interesting contrast to the one above by describing an imaginative application of theory in mathematics. Relevance is heightened because the incidence of people being overweight has recently become a serious concern in Hong Kong as many have turned from traditional Asian diets to Western fast food.

> I have never thought that maths is applied in so many different areas. For example, we did a statistics project which measured different body parts in order to find out the fat ratio. I was happy to see that work out successfully. It really works! This saves our time in shortening the complex fat measuring procedures. We have set up our own formula which we proved. (MATHS02)

It should be noted that the ways of showing relevance are consistent with the findings from the interviews with award-winning teachers (Kember with McNaught, 2007: 38). This book derived a set of ten principles of good teaching, one of which is to establish the relevance of what is taught by:

- using real-life examples
- drawing cases from current issues
- giving local examples
- relating theory to practice.

Initial understanding in professional courses

The majority of the sample were taking professional programmes. This is consistent with enrolments in undergraduate degrees in Hong Kong and in many other places nowadays. It was surprising how little many of the interviewees

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knew about either the programme they had enrolled in or the profession it led to.

> I didn't know much about this course when I chose it for [university entrance scheme]. However, I like this course more as my interest grows gradually. (COMM01)

There were two reasons why they picked professional courses. Firstly, every single student was mindful of future career prospects. All were coded for one of the career-related categories with labels *financial, career, job*, and *programme I could get into*. Secondly, a significant proportion had become disillusioned with the subjects they had taken at school. The Hong Kong school system appeared to be good at demotivating students. Having turned away from the pure subjects taken at school, professional disciplines promised a fresh start.

Building block curriculum

Lack of knowledge of the profession or discipline became a problem when the curriculum design model adopted was the traditional building block approach in which the initial stages of programmes are devoted exclusively to basic theory or pure subjects. The problems with this curriculum design are compounded if, as normally happens, the material is taught as discrete subjects by specialists in the particular area.

> In semester 1 in the first year of study, we learnt fundamental knowledge. At that time, it was not clear to me what OT was. At the beginning, I wondered why we needed to learn those subjects. In fact, they are fundamental knowledge like physiology, psychology and anatomy etc. They are fundamental but I can say that the arrangement is not good. In the first year, we learned OT Theory but I didn't know the importance of it. I knew its importance only when I had to handle cases, like analysing the patients. (OT01)

Without knowledge or experience of the profession, the students had limited appreciation of how the basic knowledge was utilized within the multidisciplinary field. Unless relevance was established the subjects became abstract theory for which the only motivation for learning was to pass the examination. Several interviewees saw that their motivation would have improved had they been shown how the basic knowledge was utilized in the profession.

> At present, some junior students told me that they don't know what they are learning after studying for a year or a year and a half. We have a clear concept why we have to learn certain subjects. The junior students don't know what they are learning. We must learn basic knowledge but it is better for us to take some introductory courses on our core subject such as production planning, product design or e-commerce. It is better to give us a brief introduction

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earlier. This makes it clear to us what we are learning. At present, there is a gap in the curriculum. Say, what is product design? Why do we need product design? They don't have an idea in mind. Thus, this is totally a new thing to the students. I understand their feeling well as we experienced the same. (MENG01)

Schön (1987) argued that professional schools had traditionally based their curricula on the principles of technical rationality. In doing so they assumed a hierarchy of knowledge which began with basic science, then applied science and finally technical skills of day-to-day practice. Curriculum design, therefore, tried to ensure that students had a thorough grounding in basic science before proceeding to applied science. Exposure to the type of issues encountered in everyday practice would be the capping element of the curriculum. Schön's main thesis was that this approach to professional education failed to adequately prepare students for the complex ill-defined problems professionals have to deal with in their practice. It is evident from this study that the building block curriculum also tends to demotivate students. The building block curriculum was not confined to professional disciplines. The mathematics student quoted below also failed to see the relevance of theoretical material taught in the first year. Realization eventually dawned, but if relevance is revealed late in a programme, motivation can sink to such low levels by that stage that students become alienated.

We learned theoretical stuff in the first year. To conclude we didn't know why we learned them in the first year. Then I realized the function or the usefulness of the tools or theories I learned while I started my second year of study. (MATHS01)

Mapping subjects

It is clear from the comments in the section above that the students could see the problems with the building block curriculum. Several students explicitly suggested that a better approach would have been to reveal a curriculum map at the start of a course to show how the components fitted together to make a coherent whole. In professional courses this could at the same time show the multidisciplinary nature of the professional role and reveal how the basic knowledge was drawn upon in practice. The mathematics student quoted below intimated that this approach was used when teaching colleagues informally.

Perhaps, it is good for the lecturer to stimulate students' motivation. I suggest that the lecturer should at least let us know the major directions. This is referring to my experience of teaching friends on computers. I will show my friends the direction; like what we are doing is for what function. For example, the lecturer can give us some idea why we are learning about the vital statistics. Then students will get an idea of what the information will be used for.

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> At least, we have got the framework. I think this will make our life easier and increase our motivation. (MATHS01)

Initial experience in professional programmes

The other way of establishing the relevance of basic knowledge in professional courses was through fieldwork. Professional experience exposed the initially naïve students to the work of those in the field. The result was both experiential learning and a realization of the knowledge needed to be an effective professional.

> Of course, we learnt a lot from that placement as we had direct contact with the patients. (OT01)

Some of the fieldwork experience came too late in the degree for the students to benefit from the potential motivational impact. The rationale for the timing was again presumably that of the building block curriculum. To do anything effective in the field, students first needed to learn the basic knowledge taught in the initial years. This is a perfectly logical position, but removes the opportunity for students to undergo experiences which enable them to see the relevance of what is taught in class. The answer to the issue of lack of expertise seemed to be to have multiple placements with expectations growing as the students progressed through the programme and developed expertise. An initial placement early in the programme could be there mainly to enable the students to find out what professionals in the field actually did; so that they could relate theory taught in class to situations they had experienced.

> During our first placement, the expectation wasn't high on us since the aim was for us to explore; by the time when we have to do our second placement, the organization may have high expectation on us since we'll be graduating a year from now. (SW02)

There was no doubt that working in the field could be highly motivating. Learning through experience can be a very meaningful form of learning (Kolb, 1984). The experience provided could give learners who entered the course with little idea of their intended profession insights into what it entailed. The experiences gained could be related to classroom theory providing a context for its understanding. Familiarity with the requirements of working in the field could help in establishing the relevance of foundation knowledge taught in class.

> I really worked for a year in a hotel. I have changed a lot after having this experience. I treasure my time being a student! I will work soon after my graduation. I think this is one of the stimulators for my motivation. (HTM02)

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Establishing relevance in professional courses

Students in both professional and non-professional courses expected teachers to motivate them by stimulating interest in topics by showing how they were relevant. In professional courses this could be accomplished by setting assignments which were authentic to the profession.

> For radio and TV production course, it is very interesting. You have to go to the 11/F of Communication Faculty. It is a studio and it is very cold. You will see a blue background which is for our future key in background. You will find two anchors sit in front of the camera. Few students are responsible for the rolling of cameras. Some will do the count down and some work on panels; audio and video panels. Push the panel to fade in background. Some will be responsible for the positioning of microphones. At the beginning, you have to stand there like an audience. 3–2–1 and the anchors welcome everybody. You will find many interesting scenes. We have two times for rehearsal before the actual filming. When it is on air, everyone keeps complete silence as we are serious about what we are doing. This course is interesting and everyone has the chance to try every role by turns. (COMM01)

Double-edged sword of professional relevance

Professional courses had the opportunity of establishing relevance through teaching and assignments which related to the profession. The quotation above and some previous ones have shown that, when curriculum design had a focus on professional relevance, students could be highly motivated. However, a failure to establish relevance in professional courses had a double-edged sword effect. Students enrolled in the programmes with an expectation that they would provide an education which would equip them for their future career. If it was not clear how what they were taught was relevant to future needs it was easy for morale to diminish. This happened all too often with the commonly adopted building block curriculum if there was no early period of professional practice or a course which mapped the relationship between the threads of basic and professional knowledge to future practice.

Conclusion

This article has been on the topic of the importance of establishing relevance in motivating student learning. The reported insights have been drawn from a wider and more general examination of factors in the teaching and learning environment which university students found motivating or demotivating. Four main methods for establishing relevance were derived from the transcripts:

- showing how theory can be applied in practice
- establishing relevance to local cases

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- relating material to everyday applications
- finding applications in current newsworthy issues.

The traditional building block curriculum, in which the initial concentration is upon learning basic fundamental knowledge, posed the danger of demotivating students. It was common for students to perceive the initial stages of their degree as exercises in taking a series of discrete abstract subjects. If relevance was not established students were unable to see how the subjects related together and contributed eventually to a thorough grounding in their discipline or profession. There was value in having an initial course which acted as a road map to show students how multiple subdisciplines fitted together to make a coherent programme of study. In professional programmes it was worthwhile having an early period of professional experience, which gave students early exposure to their eventual profession and enabled them to see the need for background knowledge and skills. Such early exposure was particularly valuable for the, surprisingly high, proportion of students with limited knowledge of the profession.

It is appropriate to note that the sample contains a variety of disciplines which were chosen to be as representative as possible of a full range, given the limitation of a qualitative study. There is a mix of professional and non-professional disciplines. The principle that motivation can be enhanced through establishing relevance applied to each of the disciplines investigated. The main principles of how to do so also were cross-disciplinary. For professional programmes there were additional considerations, but no radical distinctions.

The study was confined to Hong Kong, but the results should be applicable in other contexts. Analysis of interviews with an international sample of award-winning teachers suggested that the principles of good teaching were common (Kember with McNaught, 2007). Teachers in reputable universities are best treated as an international community in terms of the principles of good teaching.

The next step is for the findings to be put into practice. An attempt has been made to provide sufficient detail in the quotations included for readers to apply the insights to their own teaching. If any attempts to do so are properly evaluated this will provide evidence for the effectiveness or otherwise of the principles derived. Such teaching innovations will then constitute the next step in further researching the topic.

Acknowledgement

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