

# **MANAGING STUDENTS MOTIVATION AND PERFORMANCE**

**Gudur Raghavendra Reddy<sup>1</sup>**

<sup>1</sup> *National University of Singapore*

## **ABSTRACT**

This paper is about an ongoing action research project on developing pedagogy to teach a basic design course in a multidisciplinary university setting. Over the past few years changes were made to teaching approaches, curriculum and learning environment to improve the quality of student learning. The basic approach of this research so far has been to identify negative aspects and try to make changes for improvement. Most of these changes were based on existing research but some followed an evolutionary path. Meaning, if a certain strategy is giving a positive outcome, repeat it. If any changes resulted in negative outcome it was changed.

This study will take few steps back and identify/analyze issues that resulted in positive outcome from theoretical perspective. The objective behind this exercise is to develop a framework to help replicate successes when developing similar courses in future.

*Keywords: Motivation, performance, design pedagogy, assessment, workload, stress, reflection*

## **1 CONTEXT**

Communications and New Media (CNM) programme is a multi-disciplinary programme offered by Faculty of Arts and Social Sciences and School of Computing, National University of Singapore. Modules offered under this programme broadly fall under three categories, “New media studies”, “public relations and communication” and “Interactive media”. Crucial component and one of the very popular courses of this programme is a basic design module titled “Principles of Visual Communication” which is used for this case study.

## **2 INTRODUCTION**

This action research project to improve learning outcome of a basic design course in a multidisciplinary university setting is now over four years old. So far the project has undergone 4 cycles of study. (A typical cycle involves four steps, Planning, Acting, Observing and Reflecting) [1]. Listed below are issues addressed during the course of this study:

- Motivation of student and Teaching environment [2]
- Workload and stress [3]
- Design critique and assessment [4]

This paper revisits above studies and hopes to find reasons for success in existing learning, instruction, cognitive and behavioural theories. Outcome of this study will be pragmatic in nature where by other educators can use it in their classroom.

### 3 LESSONS FROM EARLIER STUDIES (LITERATURE REVIEW)

This section will list relevant research, which greatly helped this study. It is formatted in a manner that is easy for cross-referring.

#### 3.1 Approaches to learning

Table 1. Motive and strategy in approaches to learning and studying

Approach	Motive	Strategy
Surface	Is instrumental: main purpose is to meet requirements minimally: a balance between working too hard and failing	Reproductive: limit target to bare essentials and reproduce through rote learning.
Deep	Is intrinsic: study to actualize interest and competence in particular academic subjects.	Is meaningful: read widely, interrelate with previous relevant knowledge.
Achieving	Is based on competition and ego-enhancement: obtain highest grades, whether or not material is interesting.	Is based on organizing one's time and working space: behave as 'model student'.

[5]

#### 3.2 Learning environment

As revealed by Lizzio et al. perception of learning environments, learning approaches and academic workload in university environment show. [6]

- There is a strong relationship between students' perceived workload and learning approach. A heavy perceived workload and inappropriate assessment influences students towards surface learning approach.
- Students' perception of bad teaching environment (teaching and, appropriateness of assessment) influences them towards surface learning approach.

#### 3.3 Method of Assessment:

Formative and Summative assessment: Difference between these two modes of assessment is that Formative assessment is usually done at the beginning or during a programme and Summative assessment is done at the end of the programme. Objective of formative assessment is to give instant feedback on student learning. This mode of assessment does not involve grading a student. Objective of summative assessment is to check level of learning at the end of the programme.

#### 3.4 Teacher vs. Student-centered learning

Table 2. Teacher vs. student-centered learning

Teacher-centred learning	Student-centred learning
In teacher-centred approaches, judgments about appropriate areas and methods of inquiry, legitimacy of information, and what	Student-centred approaches derive from constructivist views of education, in which the construction of knowledge is shared and learning

constitutes knowledge rest with the teacher.	is achieved through students' engagement with activities in which they are invested.
Encourages surface approach to learning	Encourages deep approach to learning

[7]

In teacher-centred learning an achieving student will mould his work behaviour and work output into teacher's perception of what is right and wrong [11]. If assessment is opaque to students and subjected to teacher's perception of right and wrong, there is a possibility that students (especially achieving type) work to please the teacher rather than try to make sense of a complex world and risk getting a bad grade.

### 3.5 Learning approaches and assessment

- Research indicates that teacher-centred learning encourages students to take surface approach to learning [11].
- Traditional design critique session (teacher-centred) encourages students to take surface approach to learning [11].
- End of the course assessment (again a normal practice in design education) in the absence of very clearly defined evaluation methods will encourage students to take surface approach to learning [8].

### 3.6 Motivation theory

#### 3.6.1 *Intrinsically and Extrinsically Motivated:*

Intrinsically motivated student is involved in an activity for its inherent satisfaction regardless of external reward or punishment. Extrinsically motivated student is involved in an activity for external reward or to avoid punishment.

#### 3.6.2 *ARCS Motivation Model*

The ARCS Model of Motivational Design is a well-known and widely applied model of instructional design. It is rooted in a number of motivational theories and concepts. The ARCS Model identifies four essential components for motivating instruction. Each of the four components are further broken down into three strategic sub-components [9]

1. [A]ttention strategies for arousing and sustaining curiosity and interest
  - i. Perceptual arousal
  - ii. Inquiry arousal
  - iii. Variability
2. [R]elelevance strategies that link to learners' needs, interests, and motives
  - i. Goal orientation
  - ii. Motive matching
  - ii. Familiarity
3. [C]onfidence strategies that help students develop a positive expectation for successful achievement
  - i. Learning requirements
  - ii. Success opportunities
  - iii. Personal control
4. [S]atisfaction strategies that provide extrinsic and intrinsic reinforcement for effort
  - i. Intrinsic reinforcement
  - ii. Extrinsic rewards
  - ii. Equity

## 4 FRAMEWORK

The core objective of this action research is to encourage students to take deep approach to learning. Strategies used to achieve this objective invariably have to do with creating intrinsic motivation to learn.

Figure 1 shows an attempt to tie down successful strategies used so far under ARCS motivation framework. Layer 1 indicates core issues addressed during course of this

study. Layer 2 is adapted from the ARCS framework which satisfactorily integrates strategies used in all previous studies.

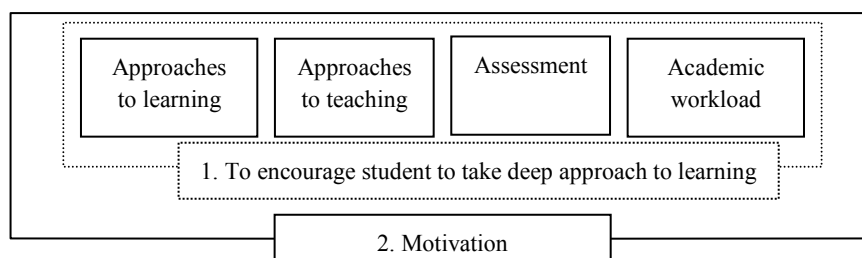


Figure 1

## 5 APPLYING THE FRAMEWORK

Three key factors in the ARCS framework has been developed for application and testing in a design course in CNM at NUS.

*Course title:* Principles of Visual Communication

*Number of students:* 90

*Format:* 2 hour lecture, 4 groups of 2 hours tutorial (design critique)

*Assessment:* 100% continuous assessment

### 5.1 Attention Factor

*Perceptual Arousal:* provide novelty, surprise, incongruity or uncertainty.

- Active participation: Strategies such as games, role play and classroom exercises are used to get students involved in subject matter and also to encourage interaction with other students. Example: We play charades before one of the lectures on communication theory. The game is played to explain concept of shared experiences.
- Incongruity: Sometimes in the middle of a lecture some contradictory statements are made. These are usually in the form of extreme examples. Most students do notice there is something wrong but are hesitant to question the teacher. This is more relevant to Asian students. Where most of the students are brought up to respect and not to question seniors/teachers. But, when it is done often, they gain enough confidence to point out the discrepancies.

*Inquiry Arousal:* stimulate curiosity by posing questions or problems to solve.

- Simple questions are posed to the classroom to keep class attentive. Usually these questions are kept simple to encourage students to respond. This again is a cultural issue. Asians (especially Singapore) shun activities that involve risk. But as course progresses, activities and questions both are gradually increased in difficulty. This increase is kept in tune with students' increase in confidence.

*Variability:* incorporate a range of methods and media to meet students' varying needs.

- Teaching style and methods are varied to account for individual difference in learning styles. A balance of theory, audiovisuals and hands on methods are used to cater to all three learning styles Visual, Auditory and Kinesthetic & Tactile [10]

### 5.2 Relevance

*Goal Orientation:* present the objectives and useful purpose of the instruction and specific methods for successful achievement.

- On the first day of the semester all students are asked to introduce themselves to the class. In the introduction they have to explain why they are reading this course. Followed by their introduction, teacher explains in detail objectives of the course and what is expected of the students. As teacher is already aware of students' expectations, if any student's expectations does not match course objectives they are informed of consequences of mismatch.
- Knowing students' motives for course enrollment has another advantage: We now realize that each batch of students is slightly different. Since past one-year Singapore government is pushing hard to establish art, design and gaming industry. In tune with government's thrust, this semester students are better informed and keen to learn finer aspects of design. Accordingly this semester course was fine tuned to go a bit in depth into design theory.

*Motive Matching:* match objectives to student needs and motives.

- We have students coming from at least three majors, New media, Sociology and Computing. Each bring with them their own learning style and motivations. Apart from their artwork they have three more avenues for expressing and explaining their ideas, concepts, and rationale behind them. They are writing (journal), visuals (sketch book journal) and presentation (critique session).

*Familiarity:* present content in ways that are understandable and that are related to the learners' experience and values.

- Students who read this course don't have any formal experience in visual field. They are usually very strong in language skills. Since this module is about communication through images it is quite easy to align subject content with their existing knowledge. Example: when explaining visual form we draw parallels to language structure (semantic, syntactic). We also play a game of miming and acting. A group of students are given a situation and they should communicate the situation without dialogue and audiences are asked to guess the situation (communication through form). Next the same thing is replayed with wrong dialogues (form and content mismatch). This game establishes importance of how form should support content.

### **5.3 Confidence**

*Learning Requirements:* inform students about learning, performance requirements and assessment criteria.

- At the beginning of the course students are give detailed criteria for assessment. Uncertainty of assessment methods put students under stress and will encourage students to switch to surface approach to learning.

*Success Opportunities:* provide challenging and meaningful opportunities for successful learning.

- All assignments are open ended and only have minimum requirements listed. There are no limitations to what students can achieve. This keeps both achieving and average students stress free.
- Match students' ability to task: Most students reading this course have no previous experience in design. Biggest problem with this is that, they are not quite sure if they are capable of handling a given task. To alleviate this problem, we started showing works of students (average and good examples) from previous semester. This has such a drastic impact on students' confidence that we have quantum leap in performance. (Example images removed for lack of space)

*Personal Responsibility:* Link learning success to students' personal effort and ability.

- Students blog (maintain online journal) to showcase their course work and seek feedback from peers and instructor. Positive comments coming from peers and instructor are true indicators of student's achievement.

## 6 CONCLUSION

During this study students were aware of the nature of this investigation. This we feel has potential to skew this study's outcome due to Hawthorne effect (people's behaviour and performance change following any new or increased attention)

At this stage it is quite hard to answer with certainty if improvement to students' approach to learning is entirely due to changes made to teaching environment and approach or if above-mentioned phenomenon has any impact on the outcome. This framework is being tested on course where investigator is not involved in teaching and students are not informed during the course of the study. Outcome of this study will be reported in the near future.

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<sup>1</sup>Raghavendra GUDUR Reddy  
 Communications and New Media Programme  
 Faculty of Arts & Social Sciences  
 National University of Singapore  
 Singapore 117570  
 cnmgr@nus.edu.sg  
 (65) 65165128