UNIVERSITI PUTRA MALAYSIA

COMMUNICATION STRATEGIES IN IMPLEMENTING THE 3Rs MOBIUS PROGRAMME (REDUCE, REUSE, RECYCLE) IN MALAYSIAN SECONDARY S CHOOLS

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COMMUNICATION STRATEGIES IN IMPLEMENTING THE 3Rs MOBIUS PROGRAMME (REDUCE, REUSE, RECYCLE) IN MALAYSIAN SECONDARY SCHOOLS

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ACKNOWLEDGEMENTS

After turning down, twice (by right I should highlight this in bold and possibly use 20 point-size, or make it 60 points better still, rather than this teeny meeny 12 points), an offer from JPA and later MARA to do my master's degree overseas (US and UK to be exact), after giving all sorts of excuses ranging from "Don't want to lose my seniority", "Who's going to take care of my condo", "I just bought my dream car, the Prelude" and "I love my job", etc, I have to admit it here, that I have no regrets whatsoever for finally landing myself here in UPM - and for finally able to complete this project paper. Syukur, alhamdulillah.

Even though now, the story is not the same anymore and life has become less glamourous - to the extent that I have to squat at my elder sister's house, drive a Kancil and having to borrow my younger sister's computer just to do this assignment; and worst still I don't even have a permanent job now...so much so for being afraid of losing my seniority! Life is so unpredictable. Too melancholic (or pathetic, because of my own stupidity?), I should say, but however, no need to be too sentimental about this, there's still a much bigger and greener pasture to be explored out there. I will bounce back, one day, I'm sure.

Therefore I have no one else but these people to thank for, especially my parents, my sisters, my brothers, my brothers-and-sisters-in-law and of course all my bubbly nephews and nieces for all your support, encouragement and whatever there is to make my life an interesting one and worth living. My sincere appreciation and gratitude also goes to these people, especially my research project supervisor, Assoc Prof Dr Md Salleh Hj Hassan for giving me all the valuable advice, comments, suggestions and for correcting all my mistakes, and for guiding me till the end of this research. Really, it's not an easy task. I have to thank all the other lecturers as well, especially Dr Ezhar Tamam for listening to this research idea first and for allowing me to choose Dr Salleh as my supervisor and of course my Communication Strategy lecturer, En Abdul Rashid Md Ali, from which this topic was inspired, thanks for the memorable trip to Sarawak! I have to thank the non-academic staff as well, especially Kak Bid for all her assistance, especially during my critical time and desperately in need of the SPSS. Also I have to thank En Mustapah Hashim and his assistants at the Curriculum Development Centre, Ministry of Education for the kind assistance and helpful advice in choosing the right schools and respondents for my research as well as those four years that we spent together to make the MOBIUS Programme a success. To all my ex-colleagues in UMW, thanks for being so caring, even though I'm no longer there.

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This is a testament of my capability!

Special dedication

to all my

nephews and nieces:

The boys - Saiful, Hafiz, Amir & Syafiqi

The girls - Sarah, Fairuze, Faten, Nadia & Aishah

"May one day

you will follow

your Pak Ben's

footsteps..."

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Abstract

To our grandparents, or appropriately most of our parents, learning the 3Rs in school meant Reading, 'Riting and 'Rithmetics - but now there's a new 3Rs being taught in secondary school classrooms throughout Malaysia - Reduce, Reuse and Recycle, thanks to an innovative approach to environmental education that pairs the expertise of business with education goals. The MOBIUS Curriculum: Understanding The Waste Cycle, introduced by the UMW Group in collaboration with the Curriculum Development Centre, Ministry of Education, is currently being used to teach students on the importance of an integrated waste disposal system and how they can help solve the world's growing waste disposal problem by reducing, reusing and recycling. As there are no textbooks on environmental education, the introduction and free distribution of the MOBIUS book to all secondary schools in the country, is considered as timely.

In line with that, this study will explore the various communication strategies used by the teachers in implementing the 3Rs MOBIUS Programme in our secondary schools, in order to gauge whether the programme is successful and popular among the students. Equally important is whether the communication strategies used by the teachers in the classroom could generate better understanding of the programme among students; or instead, will there be any teaching/learning problems encountered by both the teachers and students. It will also determine whether the level of knowledge and awareness of environmental issues for both teachers/students has increased with the teaching/learning of the programme. And last but not least, is it possible that the level of effectiveness of communication strategies in the classroom will help to increase both the teachers/students' level of knowledge of the 3Rs MOBIUS Concept, as well as their level of knowledge of environmental issues and general perception towards the environment.

Based on the research survey of 143 respondents from both the teachers and students, the findings showed that the most traditional method of them all, ie face-to-face communication between teachers and students is the most effective way of communicating and disseminating the contents and concept of the programme to the students. It also showed that both teachers and students were agreeable to the fact that the programme was indeed beneficial to both parties. From the findings, we could conclude that there was a clear indication that the awareness on the preservation of the environment and the importance of recycling has also increased. The findings also revealed that both the teachers/students' knowledge of the issues relating to environment has increased after they were introduced to the programme. At the same time, their caring attitude towards the environment has also increased after learning and getting exposed to MOBIUS. It also proved that the relationship between the level of knowledge of the 3Rs MOBIUS Concept with the level of effectiveness of communication strategies in the classroom and the level of knowledge of environmental issues were in fact interrelated, and without one of these elements, the MOBIUS Programme would and could never be a success, even though from the survey it was found that the concept of recycling overshadowed the name of the programme.

STRATEGI KOMUNIKASI DALAM MELAKSANAKAN PROGRAM MOBIUS 3R (MENGURANGKAN, MENGGUNAKAN SEMULA, MENGITAR SEMULA) DI SEKOLAH-SEKOLAH MENENGAH DI MALAYSIA

Abstrak

Kepada nenek moyang kita, atau lebih tepat kebanyakan ibubapa kita, mempelajari 3M di sekolah bermaksud Membaca, Menulis dan Mengira - tetapi kini wujud satu lagi singkatan 3M yang diajar di sekolah menengah seluruh negara, iaitu Mengurangkan, Menggunakan Semula dan Mengitar Semula yang diperkenalkan menerusi pendekatan inovatif dalam pendidikan alam sekitar. Kurikulum MOBIUS: Memahami Kitar Semula Sisa, yang diperkenalkan oleh Kumpulan UMW dengan kerjasama Pusat Perkembangan Kurikulum, Kementerian Pendidikan Malaysia kini digunakan di sekolah menengah seluruh negara dengan memberikan penekanan terhadap kepentingan sistem pembuangan sisa secara bersepadu dan bagaimana pelajar boleh membendung masalah pembuangan sampah dengan mengurang, mengguna semula dan juga mengitar semula bahan buangan tersebut. Memandangkan tiada buku teks pendidikan alam sekitar di negara ini, pengagihan secara percuma buku Program MOBIUS ini ke semua sekolah menengah di seluruh negara memang kena pada masanya.

Sehubungan dengan itu, penyelidikan ini akan mengkaji pelbagai strategi komunikasi yang digunakan oleh guru dalam melaksanakan Program MOBIUS 3R di sekolah menengah bagi mengenalpasti sama ada program ini berjaya dan popular di kalangan pelajar. Tidak kurang pentingnya ialah sama ada strategi komunikasi yang diamalkan oleh guru di dalam kelas dapat meningkatkan pemahaman program tersebut di kalangan pelajar; atau adakah akan timbul sebarang masalah dalam proses pengajaran dan pembelajaran program tersebut di kalangan guru dan pelajar. Ia juga akan menentukan sama ada tahap pengetahuan dan kesedaran terhadap isu-isu alam sekitar turut sama meningkat melalui proses pengajaran dan pembelajaran program ini. Dan, akhir sekali adakah berkemungkinan tahap keberkesanan strategi komunikasi yang diamalkan di dalam kelas dapat membantu meningkatkan tahap pengetahuan Konsep MOBIUS 3R di

kalangan guru dan pelajar, dan juga tahap pengetahuan isu-isu alam sekitar serta persepsi mereka terhadap alam sekitar.

Berdasarkan hasil kajian 143 responden yang terdiri daripada guru dan pelajar, menunjukkan kaedah komunikasi paling tradisional iaitu komunikasi bersemuka antara guru dan pelajar adalah kaedah paling berkesan dalam berkomunikasi dan menyebarkan maklumat tentang isi kandungan dan konsep program tersebut kepada pelajar. Ia juga menunjukkan guru dan pelajar bersetuju bahawa program tersebut benar-benar memberi manfaat kepada kedua-dua belah pihak. Daripada hasil kajian juga kita dapat membuat satu kesimpulan yang jelas menunjukkan bahawa kesedaran terhadap pemuliharaan alam sekitar dan kepentingan kitar semula juga semakin meningkat. Hasil kajian juga memperlihatkan bahawa pengetahuan guru dan pelajar terhadap isu-isu berkaitan alam sekitar semakin meningkat selepas mereka diperkenalkan kepada program tersebut. Pada masa yang sama, sikap menyayangi alam sekitar turut meningkat setelah mereka mempelajari dan terdedah kepada MOBIUS. Ia juga membuktikan bahawa hubungan antara tahap pengetahuan MOBIUS dengan tahap keberkesanan strategi komunikasi di dalam kelas dan tahap pengetahuan tentang isu-isu alam sekitar adalah saling berhubungkait, dan tanpa salah satu elemen ini, Program MOBIUS tidak akan berjaya, walaupun hasil kajian menunjukkan bahawa konsep kitar semula telah membayangi nama program itu sendiri.

INTRODUCTION

"...there are some who believe in recycling
and the toothpick is simply put into the pocket,
or a wallet, after use. Eww..."
- Extract from The Star's Lifestyle: Pig Out With Passion (July 29 1999)

Life nowadays is about recycling. Are you one of those people (as mentioned above)? Think twice, there's nothing wrong with it. Some may be obsessed. Some may not. Some may be ashamed of it, but some may to be too proud of it, to let it just hanging loose in the mouth (with reference to the above). It all depends on how you do it. To make it more understandable, this chapter will explain the background of the 3Rs MOBIUS Programme, problem statement, research objectives, significance of research, its limitations, definition of terms and most importantly, literature review.

Background

The new challenge that is confronting the world today is managing the ever increasing solid waste. In Malaysia, the amount of solid waste that we produce is escalating. Currently, an average household produces about 1kg of solid waste per day (Kurikulum MOBIUS: Memahami Kitar Sisa, 1998). As our country progresses towards "developed" status and as we are moving towards the new millennium, simultaneously more solid waste will be produced.

There do not exist one particular solution to waste management. There has to be an integrated approach. One of them is to educate our young Malaysians on the management of solid waste as well as preservation of the environment. With this in mind, one of our local conglomerates, the UMW Group, through its subsidiary, the then Alam Jernih Sdn Bhd (a consortium comprising of UMW Industries (1985) Sdn Bhd - a wholly-owned subsidiary of UMW Holdings Berhad, Kumpulan Guthrie and Browning-Ferris Inc (BFI), USA - a joint-venture partner of UMW) which has ceased operation, has a mission to provide the highest quality waste collection, transportation, processing and disposal services in an efficient, safe and environmentally responsible manner. In order for it to do so, the company has and will continue to work closely with local authorities, industries, commerce and members of the public to realise its mission and to keep Malaysia clean.

The project which was initiated by UMW Industries in 1994, in collaboration with Group Public Affairs, UMW Corporation Sdn Bhd and the Ministry of Education through its Curriculum Development Centre (CDC) or Pusat Perkembangan Kurikulum was later handed over to UMW Corporation in 1996 after the consortium failed to secure the contract for waste disposal from the government. UMW Corporation then, together with the CDC organised several seminars/workshops on teaching/training of the MOBIUS Programme for school teachers.

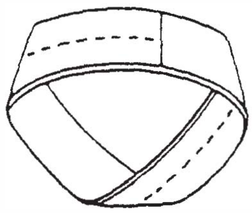
For five years, since 1994, the UMW Group has been working closely with the CDC to launch and establish a new environmental education programme, the MOBIUS Curriculum or 3Rs Programme to cater to this need. Its aim is to provide an opportunity for the company to demonstrate its goodwill to the public, especially school children on the importance of waste management and caring for the environment, with particular emphasis on recycling. At the initial stage, a localised manual from the original version was published ie MOBIUS Curriculum: Understanding The Waste Cycle and later it was translated into Bahasa Malaysia, aptly translated as Kurikulum MOBIUS: Memahami Kitar Sisa, to comply with the education medium of the country.

After the launch of the Bahasa Malaysia version in 1998, UMW is now no longer responsible for the teaching of the programme because of the copyright factor and the partnership between the two parties, UMW and BFI, was no longer in existence with the 'demised' of Alam Jernih which is now a dormant company. Therefore, it is now the responsibility of the CDC to undertake the teaching and implementation of the programme. The continuation was made possible through the consent from BFI, USA - of which the Education Ministry was given the green light to continue with the teaching of the MOBIUS Curriculum, which is taught by way of integrating it into other subjects eg Science, English, Mathematics, etc. The programme is now under the supervision of Browning-Ferris Industries (Australia) Pte Ltd.

What is MOBIUS?

The programme's name, MOBIUS, comes from the German mathematician, Augustus F Mobius, who conceptualised a continuous strip with a single twist and no beginning or end (see Picture 1). This MOBIUS strip provided the inspiration for the international symbol for the environmental cycle with its familiar three arrows (Picture 2).

Picture 1:
The MOBIUS Strip



Picture 2:
The international symbol for the environmental cycle

The popularity of MOBIUS Programme continues to grow. By early 90s, the curriculum had been donated to the Peace Corps for use in 87 developing countries. More than 10,000 teachers in North America were using the programme. Throughout the curriculum, one will meet MOBIUS, a special mascot who serves as a fun loving guide for the children as they study their lessons. The MOBIUS mascot is a life-sized character whose costume is composed of the major recycling materials, eg a plastic pop bottle serves as a hat; cape - newspaper; arms -glasses; belt buckle - aluminium cans; trash zapper -glass; legs & brim of hat -corrugated cardboard; and finally shoes -old rubber tyres. The original design for the MOBIUS character was created by a fourth-grade student from Edmonton, Alberta, Canada when the programme was piloted in 1990.

In short, the MOBIUS Programme helps students learn how they can take an active part in caring for the environment, by becoming part of the solution to our current waste disposal problems.

What Does the Programme Include

The curriculum covers all the major methods of managing waste, from sanitary landfills, resource recovery or waste-to-energy/incineration, to composting and recycling. Special emphasis is given to recycling because of its many immediate positive effects. Most importantly, it is one method of managing waste in which everyone can participate and make a difference.

Six chapters, each with separate lessons and activities are included. The curriculum is also designed to offer flexibility. Teachers may choose to use it in its entirety, integrating it into current curriculum, or they may select specific elements, depending on the individual classroom needs. Everything necessary to teach the lessons is included in each chapter.

There is a clear, concise statement of objectives, an outline, an explanation of the concepts and skills addressed, the materials needed and the procedure that may be followed, plus complete teacher-background information on all the subjects covered. Lessons in every chapter include activities that reinforce the skills learned and offer opportunities for lively class discussion, as well as "hands-on" experiences requiring teamwork and good communication skills.

The final chapter, reinforces the 3Rs and drives the recycling message home in a powerful way, as students work together to create they own recycling program for their class or the entire school. The final activity is the culmination of all the lessons learned in the entire curriculum. In the final analysis, the lessons are "teacher friendly" and is specifically designed to work well with the teacher's curriculum requirements as there exists dozens of ways for the teachers to use the MOBIUS Curriculum to teach the essential elements in all the major subject areas.

Objectives of the Programme

When the programme was first introduced, both parties (the UMW Group and CDC) have outlined these objectives to ensure the success of the project:

- To create awareness of, and generate interest among, target audiences of the MOBIUS 3Rs Programme - or better known as Reduce, Reuse and Recycle.
- To position the company as a responsible and caring corporate citizen. (For this purpose, the UMW Group was shortlisted and won the Merit Award twice under the Environmental Projects Category of the prestigious public relations project proposal competition, the IPRM Crystal Award).
- To highlight the strengths of the CDC in implementing the MOBIUS 3Rs Programme.
- To help teachers help their students develop an understanding of how the waste stream is managed by teaching them good environmental habits, with special emphasis on the 3Rs.

- To assist the Ministry of Education with the implementation of the programme since the Ministry itself has already embarked on a national environmental education programme to create environmental awareness among school children, at the end of the 80s. It was decided that the environmental education should not be taught as a separate subject but that the environmental education elements should be infused across the school curriculum.

Level of Research of the Programme

Malaysia, like other major countries in the world is also facing problems of environmental degradation which if left unchecked, will threaten the well-being and quality of life of the people. Our primary environmental issues include:

1. River pollution due to sewage waste and effluents both from households and industries, etc.
2. Oil pollution and dumping of sludge and toxic wastes.
3. Air pollution due to industries and transportation in urban and industrial areas as well as open burning of solid wastes.
4. Drainage problems in flood-prone areas both in urban and rural areas.
5. Disposal of toxic waste material from manufacturing industries.
6. Indiscriminate and excessive use of agro-chemicals.
7. Deforestation due to forest land being cleared for agriculture and other development projects.

The majority of these problems are attributed to ignorance, negative attitude, irresponsibility, values, cultural practices and lack of law enforcement as well as due to unavailability and insufficient of suitable places or treatment plants to dispose off, recycle or treat the waste materials.

It is also worthwhile to note here that the company (the UMW Group) had engaged M/S Frank Small & Associates to conduct a survey research on the attitudes of people towards an integrated solid waste management system. The following issues were being addressed in the survey:

a) Perception and attitudes towards current waste disposal.
    i) What are their attitudes towards current waste disposal pollutants?
    ii) Is improper waste disposal perceived to be a pollution in Malaysia?
    iii) How big is this problem in relation to other environmental pollution problems?
b) Need for improvement on current waste disposal.
c) Satisfaction on current waste disposal system or procedures.
d) Privatisation acceptance and willingness to pay.

Problem Statement

The environmental problems in Malaysia are mainly due to agriculture, social and industrial development as well as due to people's behavioural actions which are influenced by numerous factors which include beliefs, religious and moral values, customs and practices, knowledge, skills and experiences related to the environment.

The importance of environmental education and sustainable development was realised in the late 80s and early 90s and environmental education programmes were incorporated in the Malaysian Development Plans. Various governmental and non-governmental organisations (NGOs) have launched numerous environmental education programmes to create an environmental awareness among the public and individuals. The Ministry of Education has also embarked on a national environmental education programme to develop an environmental awareness among all the students and to solve problems related to the environment with emphasis on sustainable development. It has mapped out the environmental elements to be infused across the school curriculum, developed a training system to train the teachers, is progressively increasing the environmental education materials and is devising an effective monitoring system.

Although the Ministry is getting good support and cooperation from the public sector and the private sector (as exemplified by the MOBIUS Programme) as well as from the NGOs, mass media and political leaders, it is also faced with problems related with bureaucracy, human resource shortage, lack of environmental education materials and weaknesses in the communication network and monitoring systems.

In line with that, how the communication is carried out is what this research will look into. The methods of carrying out communication activities may also be known as the strategies in communication. The strategies are important in classroom communication because if the teacher uses the wrong strategy, the students will suffer and the educational system fails to reach the target and the main purpose of educating our children and students on the importance of protecting the environment will not materialise.

Therefore, this study will explore the various communication strategies used by the teachers in implementing the 3Rs MOBIUS Programme in Malaysian secondary schools, in order to gauge whether the programme is successful and popular among the students.

At the same time, it will also look into these particular areas:

- Will the communication strategies used by the teachers in the classroom generate better understanding of the 3Rs MOBIUS Concept among students.
- Will there be any teaching/learning problems of the programme encountered by the teachers/students of the selected schools.
- Will the level of knowledge and awareness of environmental issues for both teachers/students increase with the teaching/learning of the programme in their schools.
- Is it possible that the level of effectiveness of communication strategies in the classroom will help to increase their level of knowledge of the 3Rs MOBIUS Concept, as well as their level of knowledge of environmental issues and general perception towards the environment.

Research Objectives

General objective:

The research objective of this study is to identify and evaluate the various communication strategies used by the teachers in implementing the 3Rs MOBIUS Programme in Malaysian secondary schools.

Specific Objectives:

1. To find out the communication strategies used by the teachers in the classroom to achieve understanding of the 3Rs MOBIUS Concept among students.

2. To determine teaching-leaming effectiveness in the classroom among teachers/students of the selected schools.

3. To asses the level of knowledge and awareness of environmental issues among students and teachers, as well as their never-ending concerns for the environment.

4. To determine the relationship between the level of knowledge of the 3Rs MOBIUS Concept with the level of effectiveness of communication strategies in the classroom and the level of knowledge of environmental issues.

Significance of Research

Nature is a never ending cycle, and if we are going to become responsible stewards of our Earth, we must learn to use and preserve its resources, so that we will interfere as little as possible with the natural environment. Through the MOBIUS Curriculum, students will gain an understanding of recycling and why it is so important through classroom activities that will give them a variety of opportunities for hands-on learning experiences. In Malaysia, more and more students are getting really excited about recycling; In fact, many have set up recycling centres, not only for their classrooms, but for the entire school.

The MOBIUS Programme helps to get Malaysian students even more excited about recycling. Students are also taught to manage our waste stream by putting the 3Rs into practice. They can reduce waste by making intelligent buying decisions - purchasing products with packaging made from recycled materials, or for example, purchasing one big bag of potato chips instead of six small ones, or using canvas shopping bags. We can also reduce waste by reusing various items, such as glass bottles, using old clothes and torn clothes as rags, saving plastic bags and aluminium foil and using them again and again.

In the MOBIUS Curriculum, students will have the opportunity, not only to learn the 3Rs, but also to develop skills in science and mathematics, history and social studies, vocabulary building and problem solving, drama, journalism and advertising, as well as leadership, teamwork and communications. The curriculum covers all the major methods for managing waste - sanitary landfills, resource recovery or waste-to-energy/incineration, composting and recycling, with special emphasis on recycling, because of its many immediate positive effects, and because it is one method of managing waste in which everyone can participate and everyone can make a difference.

Through this research, it is hoped that it would be able to recommend for an improvement of the teaching techniques, curriculum adjustment and instances of more effective communication in the classrooms with regard to the results of the research. Thus this study will help educational planners, policy makers and teachers to improve and revise the curriculum and evaluate necessary programmes/steps to make them more meaningful and relevant.

Limitations

Although the results obtained from this study were derived from only six schools in the Klang Valley, it must be noted that these schools are among the active players in putting the programme into action. At the same time, these schools are being monitored closely by the CDC to ensure that they are always on the right track. Even though these schools could not be considered as a reflection of other schools throughout the country, somehow rather they are a good example of how the programme is being implemented.

Obviously it would be difficult and impossible for the writer to cover all states, as time and cost factor would create all the unnecessary problems later on, unless a reliable and trustworthy body or organisation is willing enough to sponsor this research on a larger scale. But then, who knows, maybe this research could be extended to a doctorate level? However, according to the CDC, the findings from this research will not and can never be