

The purpose of using multimedia learning education essay



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CHAPTER 1

The purpose of using multimedia learning in schools is that it offers exciting possibilities for meeting the needs of 21st century learners. Multimedia learning can be defined in a number of ways. For the purposes of this research multimedia learning would be defined as the delivery of instructional content using multiple modes that include visual and auditory information and student use of this information to construct knowledge. Today our students live in a world in which digital technology is part of the texture of their daily lives. They have never known a world without technology. Technology is their native language and it is expected to use technology in school.

While some students have greater access to technology than others, computers with Internet access are now nearly universally available in every schools in Mauritius. Internet-enabled computers and cell phones are

pervasive outside of school. The use of technology by teenagers is at its highest level and is projected to increase. This increased reliance on technology combined with what we know about brain processing, offers enormous potential for instruction. According to Betrancourt, M. (2005), research has shown that the brain processes information using two channels: visual and auditory. When information is presented using both channels, the brain can accommodate more new information. By taking advantage of this multimodal processing capability and technology-based tools, we can dramatically enhance student learning through multimedia instruction.

Researchers now believe that there are multiple channels in working memory; Baddeley (1992) proposes an auditory and a visual channel. The auditory channel handles information that is heard, while the visual channel processes information that is seen. Text seems to have unique processing requirements, with words initially captured by the visual channel and then converted to sounds in the auditory channel (Mayer, 2005).

Home Economics education is described as a life-long education and helps students to interpret and understand the world of family and work, to identify and solve challenges that occur in their daily lives. It significantly contributes to building students' personalities and characters and prepares them for the requisites of the labour market. In fact, Home Economics is a multi-disciplinary subject where the main objectives is to develop skills, knowledge and values in student so that they can improve their quality of life. During the late 1980's Home Economics education embarked on enhancing the student's personal skills in logical thinking, creative and

critical approach, management skills, and problem - solving skills, expression, self-directed learning and responsible action among others.

This states that students should be encouraged to take a more active part in their learning, they have to manage their own learning and analyse problems encountered by providing plausible solutions based on managing resources effectively. In this connection, various learning strategies have been put forward such as inquiry learning, problem-based learning, cooperative and collaborative learning and discovery learning. With the growing diversity of students in every classroom, I believe it is becoming essential to offer alternate choices in how to learn and more ways that can engage learners in ways they learn best. This can be achieved only if the teaching strategies chosen foster curiosity, joy of learning and motivate the student for further discovery learning. Hence learning approaches should be varied to simulate learning by considering the multiple intelligence and learning styles of different learners in a class.

I am conducting this study bearing in mind my students' differences in learning style and ability. The research focuses on promoting more effective manipulative skills and creativity for food studies practical tests at Form VI level, in which students have to meet certain standard and requirements as per the examination criterion. Food studies is a component of the Home Economics curriculum, in which students are expected to learn about nutrition food preparation both in theory and practical. According to the Home economics curriculum, one of the objectives of teaching Food studies practical is that students should be able to handle food safely and

hygienically, demonstrating a variety of manipulative skills to a high standard of execution, and the use of a range of utensils and appliances.

(Source: Cambridge International A Level Food Studies Syllabus, Obj 5- Appendix 2)

Manipulative skills as cited by Evans (2001, 13), may be classified as how to use the hands, how to carry, hold and use tools with emphasis on the safety and hygienic aspect. For the practical test, manipulative skills can also imply the use of using labour saving devices to achieve economy of time and energy, and the purpose of it with precision. Secondly manipulative skills also include culinary skills (chopping, dicing, and grating among others), cake making (rub-in, creaming, whisking, kneading, fold- in), methods of cooking (frying, boiling, steaming) and measurements and terminologies. Thus students are expected to learn and realise the above mentioned skills with precision and accurately. To attain this objective, students need to master the correct technique must demonstrate versatility and originality in food preparation. In order to bring a change in my current practice, I opted for the use of multimedia to simulate students' interest and better understanding of the skills stated above.

Miler (2005), suggests that the visual channel handles less information than the auditory channel. However, when information is presented using both the visual and auditory channels, working memory can handle more information overall. Using multiple channels can increase the amount of information that the brain can process (Sweller, 2005). But, there is still the risk of cognitive overload. Too much information delivered in an ineffective manner can

interfere with the brain's ability to successfully integrate information into long term memory.

PROBLEM STATEMENT

During the past four years I have been teaching Food and Nutrition as well as Food studies. I had the opportunity of working with both low and high ability students. I have noticed that the students fail to recall the advanced skills related to food preparation when preparing and serving dishes. Also, concerning measurement and terminologies, manipulative skills and the use of labour saving equipment, students fail to demonstrate the correct use with accuracy and precision. Consequently, students are unable to prepare the dish with the right texture and consistency which results in disappointment after the practical class or contribute to low marks for practical assessment. This has a negative impact on students' attitude and low learning interest is shown towards the subject. A loss in students' learning interest affects the learning environment since the students have low self - esteem and do not concentrate on their practical classes.

The HSC results in Food studies are going down drastically. The poor performance can be accounted by a lack of enthusiasm and interest from the part of the students. They find the subject too theoretical and boring.

Moreover concerning the practical classes, they fail to prepare and serve dishes correctly. Thus a lack of interest and motivation prevent the students to perform all the manipulative skills correctly. Many students think that cooking is simply following a recipe, but there is much more to it than that.

The ability to properly prepare a dish, modify or season a dish and keep the kitchen safe in the process is a series of basic culinary skills that students

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have to practice and master. This is the aim of every practical class. There is a lack of accuracy, wrong use of equipment/process and serving skills among students. Although the A- level Practical syllabus lays much emphasis on no repetition of skills and garnishes, students fail to respect these particular criteria each year. Also probably due to time constraints and stress of working under examination condition, the students prepare and serve the five dishes in a rush failing to include their final touch of creativity while serving. Consequently, the required standards is not produced which results in poor performance of students. This can be a very discouraging factor for students as they lose their self- confidence and interest in the subject. Eventually not more than ten students opt for Food and Nutrition at O- level and the number of students taking the subject at A-level is decreasing year by year.

When teaching Food Studies, prior to the practical classes I use direct instructions so that the students can have an overview and on the day of the practical, the explanation is supported with a step by step demonstration by peers or the teacher herself. The students then embark the hands on activity. It can be an individual work or pair work, depending on the nature of the class work. I believe that the chalk and talk method should be left behind and more interactive method to promote efficient learning and development of manipulative skills should be used to arose interest for the subject and to promote meaningful learning among students. Creating meaningful learning has been a desired goal for many educational institutions in the last decade, as education focus has shifted towards knowledgeable and critical students. Hence, providing learning opportunities for students is crucial.

Generally, the students work well during continuous assessments and exams carried out at school. But, according to me and the other colleagues in the Home Economics department, at the school level students' performance in Food Studies practical is not satisfactory and this is leading to a decrease in students learning interest. The following factors have been seen to be probably the cause:

Regular forgetting of ingredients

Not completing the practical work on time

Poor notion of manipulative/culinary skills

Too much of relying on recipe for step by step

Lack of practice- lack of confidence

Students rely solely on the demonstration of the teacher - no creativity.

and also students are not motivated towards the subject. A lack of motivation prevents the students to give the best of them.

In addition, a brief and informal enquiry among Home Economics teachers from other schools made me aware that even they face the same problems with the students. But in spite of the teacher doing her best to prepare the student after two years of hard work using different teaching strategies namely group work, guided discovery learning, presentation among others the results for the practical test does not change much. A- Level practical results in most of the schools across Mauritius range from fair to poor. In

spite of a close monitoring of my students progress, appropriate teaching strategies were adapted to encourage the students to work and improve their performance, the recent A level Cambridge results was still disappointing,(Appendix 3). Hence the main issues of concern may be the disparity of the examiners expectation in each center in Mauritius. If the student fails to meet the expectation of the examiner assessing the practical test, the latter might receive low marks. There is no transparency on how the practical test is being corrected as no feedback is given to the teachers on the students work. Thus we teachers do not know how our students have been assessed and what went wrong for the practical test. As a matter of fact, many students (both low and high abilities) obtain the grade 13 in their practical paper which implies a failure. This is a discouraging factor for both the teacher and the student. From the student point of view, it is a waste of time/ money/ resources and as a teacher even to-day I do not understand what the examiners expect from our students and somewhere may be we teachers are failing to prepare our students for the practical exam due to a lack of feedback.

1. 2 JUSTIFICATION OF THE RESEARCH

Throughout this study, I wish to effectively impart the various skills of food preparation, i. e starting from the very first process of weighing to the final process of serving and sensory analysis in Food studies practical to my Form VI students while making them enjoy each lesson. For the past four years, I have reconciled to the fact that many of my students do not show interest to Food studies practical lessons since they find it difficult to follow the step by step procedures with accuracy bearing in mind they have to complete five

dishes in three hours for the exams. Thus, it can be time-consuming and requires a lot of extra resources.

The poor performance of the students in Food Studies and the decrease in the number of students taking up the subject cannot be dissociated with the way it is being taught actually. Today still, despite trying to implement some new teaching strategies, the teacher-centered approach is much “en vogue”. Due to time constraints, finishing the syllabus becomes a priority with teachers. Group work, activity based methods, inquiry learning and role play appear too time consuming for students and teachers. The more traditional “teacher talks and students listen” seems more apt to fulfill the syllabus aims and objectives.

Since form III level, in the practical classes students are encouraged to serve dishes attractively. However for O-level, the presentation need to be neat and clean, though its simple However for A- level, the approach itself is different. Students need to have mastery of the different techniques and skill involved in the practical classes and above all, the presentation of the dish should be highly appealing and attractive. However, through year’s observation, I have noticed that students lack accuracy in performing the manipulative skills correctly and creativity, thus failing to bring along innovative serving skills. For the practical, students often have some confusion about certain ideas, for example, using a bed of lettuce and shredded lettuce, using coating whipped cream on a cake and using piped cream on cheesecake, doing stuffed pancakes and doing lasagna, using tomato rose and using tomato slices. It should be noted that each dish need to have at least three different garnishes/decoration items without any

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repetition. Also neatness and quality are very important. Failing to accomplish these criteria can prove to be deterrent and has a negative impact on the performance of students. Thus, teachers should come up with a rich variety of learning opportunities which would enable to build on existing experiences and personal strengths based on their learning styles.

Kalyuga, S(2005) found out that when teachers and students participate actively towards goal oriented processes, better learning is achieved. Not only the students would benefit from it but also the teacher would be able to foster a stronger teacher- student relationship. Involving students actively in various processes by making use of audio visual aids and auditory support creates a new channel for the learning process. The attention of the students is retained for long and this helps to decrease boredom among learners. Through this study I want to find out whether I would be able to improve the teaching and learning of Food Studies manipulative skills using multimedia.

The use of multimedia holds much potential for the effective teaching and learning process. Sooner or later; teachers would be compelled to follow the trend, lest they want to become obsolete. As the students love the internet and the various tools, it might be expected that they will be more motivated to learn Food Studies with the help of technology. There is little literature about the use of multimedia to develop students' performance in Food Studies Practical, thus it will be interesting to probe deeper to provide a better quality of education to my students and generate the desired and expected outcomes in my school.

1. 3 RESEARCH AIM

The aim of my research is to investigate the use of Multimedia to foster students' performance and ability in learning of manipulative skills in Food Studies Practical at Form VI level.

MAIN RESEARCH QUESTIONS

How can the use of multimedia help to create effective learning?

How far does multimedia learning succeed in offering the user an engaging learning experience?

Can the use of multimedia i. e. – visual and auditory medium help to motivate students (intrinsic and extrinsic) and contribute to better performance in the practical paper?

Can the use of multimedia help the students to work with precision, brings versatility in dishes chosen and serve dishes attractively?

How far the use of multimedia would be efficient to produce better results in Food studies practical exams?

These questions will help me to conduct the case study and to investigate the effectiveness of using multimedia in the teaching and learning of manipulative skills in Food studies Practical at Form VI level. I have two classes with 10 pupils. They will be exposed to multimedia learning that is various sources of tape recordings on food preparation including basic culinary skills, cake decoration, pastry making, sauces, preparation of garnishes and decorations where by the proper manipulative skills will be

demonstrated. Four research tools will be used to collect data namely, observation check list, informal interview, student questionnaire and achievement test.

1. 4 AIMS OF THE STUDY

The overall purpose of this study is to determine whether the use of multimedia can foster students' performance and ability besides promoting effective and interest based learning of Food Studies practical tasks at Form VI level.

1. 5 RESEARCH OBJECTIVES OF THE STUDY

The main objectives of this study are to:

To change from the traditional method of teaching to a more modern and dynamic approach using multimedia.

Promote interest driven learning and engage student in the learning process.

To develop students' visual memory and intrinsic motivation

To enable students to prepare the dishes with precision and uniformity

Develop students' creativity and improve mastery of the basic concepts required for the practical paper.

Evaluate the effectiveness of multimedia in the teaching and learning of manipulative skills

Reflect upon my teaching and improve upon my teaching skills.