

EZ Research Monograph Vol. I, 2009

English Language

No	Title	Abstract	School	Author
1	Action Research on Using an Adaptation of Direct Vocabulary instruction in the Singapore English classroom	This paper does four interesting things. First, it offers the use of Direct Vocabulary Instruction to teach contextual meaning of words in English Lessons. Second, the author reveals five limitations associated with Marzano's 6-Step approach on Direct Vocabulary Instruction. Third, the author overcomes these limitations with two simple ideas. The author's first idea uses words that students encounter in the other subjects in order raise the students' awareness of their contextual meaning. For example, 'Sound' in Physics, will have a different meaning in "This house is structurally sound." or "That is a sound argument." The author's second idea is to tap on the existing schema that students already have and build on it by introducing more word associations in order to help students expand their mental mindmaps on the word(s). Lastly, this paper describes author's Action Research journey in applying DVI in classroom.	Bedok View Secondary School	Sandra Ezekiel

Chinese Language

No	Title	Abstract	School	Author
1	A Study on effective ways in teaching Chinese Characters for the new CL syllabus for Pri 2	<p>This Action Research aims at finding the effective strategies in solving the problems faced by teachers of Casuarina Primary School in the teaching of Chinese Characters at lower primary level. The focus is placed at analyzing the Chinese Characters at Primary 2 level using scientifically proven theories. This Action Research project carried out by teachers using their own design package consists of School Based Teacher's Guide, series of worksheets and assessments. The content is mainly the teaching of Elements in each Character using the existing textbook for Primary 2.</p> <p>By teaching our pupils the basic ways of analyzing the Chinese Characters Form and structure using our designed worksheets and strategies, we hope to achieve the target of effective recognition of Chinese Characters and its Elements. The surveys and feedbacks collected from teachers were taken into consideration during the course of the research in adjusting and fine tuning of procedures used. The results further affirmed the effectiveness of Element-Teaching method.</p> <p>The School Based Teacher's Guide and samples of surveys, feedback, worksheets and assessments are attached as annexes at the end of this paper. These can be used for the purpose of examining the conclusion derived in this research and as basis of references for further studies in the same domain if needs arises.</p>	Casuarina Pri School	Kate Cheng Hwee Kooni

2	<p>Using Action Research to enhance the level of Primary Five Pupils' self-expression in Chinese Composition of a Singapore School</p>	<p>Composition writing is often pupils' weakest component during examination. Their weakness in self-expression during composition writing has often led the pupils to attain only a borderline pass for their composition due to their limited content and language skills in engaging readers emotionally. This has impact their Chinese Subject grade adversely. In this research study, we use Action Research to explore the effectiveness of guided reading of Chinese short passages in improving the writing skills of Primary Five (P5) pupils, particularly in self-expression. Two classes of P5 EM2 pupils with similar academic background and language ability are involved. According to the Singapore Primary School Education system, to maximise pupils' potential, pupils are formally streamed according to their learning ability at the end of Primary 4.</p> <p>They are placed in one of three language streams, namely EM1, EM2, and EM3, according to their abilities. Pupils in the EM1 and EM2 streams do English, Mother Tongue, Mathematics and Science. EM1 pupils may do Higher Malay/Chinese/Tamil as their Mother Tongue. Pupils in the EM3 stream do Foundation English, basic Mother Tongue and Foundation Mathematics.</p> <p>This research study was conducted through a series of fourth Action Research Cycles. During the process, a set of surveys was conducted to measure the effectiveness of applied interventions. These surveys included, a pre-survey, a survey to analyze self-expression used in pupils' written composition as well as a post-survey.</p>	<p>Junyuan Primary School</p>	<p>Teo, Wan Qi & Liu, Ern Ming</p>
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Maths

No	Title	Abstract	School	Author
1	A Systematic Approach to Solving Descriptive Mathematical Problems in a Singapore Elementary School	This paper gets into the core of using Action Research to derive a systematic 7-step approach to help pupils in solving descriptive mathematical (or word) problems in an elementary school. This systematic approach helps pupils move into a connecting stage when they can associate their mathematical symbolism with the written descriptions of a word problem. It directs pupils towards 'how to think' in solving word problems and prevents them from getting transformed mechanically into merely 'what to do', resulting in another form of procedure. Experiences and knowledge gained from teaching this approach are described as a series of four Action Research Cycles with a view to show other fellow teachers what it would look like in their classroom with their students.	Tanjong Katong Primary School	Song Shu Fang
2	Enriching the Classroom Experience of High Ability Learners in the Learning of Mathematics	This paper was written with three objectives in mind. The first is to convey something of the fascination of mathematics – of its austere beauty, intellectual power and infinite variety that can be used to nurture the high ability learners (HALs) in school. The second is to draw attention to the eventful activities of a derived Maths Enrichment Lesson (MEL). The third is to describe the application of Action Research in this research study.	Tanjong Katong Primary School	Tay Wee Teng Alice
3	E-Portal, an effective tool for Mathematics e-Learning	E-learning is an essential trend in education for the 21st century around the world. Singapore's Ministry of Education (MOE) discusses a 21st century education system that incorporates strategic actions to embed e-Learning in education. IT Master plan and Teach Less Learn More (TLLM) concepts were introduced to develop more independent learning with the infusion of IT in teaching. This has sparked a rise in IT companies providing online learning packages to schools. This research will look into the effectiveness of the E-portal as a tool for Mathematics learning with comparison to traditional teaching in Springfield Secondary School. The subjects of study were Secondary Three Express students taking Elementary Mathematics in secondary school and the E-portal use is by Ace-Learning Systems Pte.Ltd.	Springfield Secondary School	Chng Chen Keong

Science

No	Title	Abstract	School	Author
1	The Impact of Peer Teaching in Improving Students' Motivation to Learn Science	This paper aims to examine the impact of peer teaching on the motivation of students in learning Science using Kagan's cooperative learning strategy as a teaching methodology. 70 Primary 5 students were involved in the study and a pre and post study survey was conducted. Motivation was measured in terms of students' enjoyment of learning and the perceived benefits obtained. The results were overwhelming; 94.1% and 95.6% respectively. In addition, this study also uncovered students' attitudes and beliefs about learning from their peers and present the possible recommendations to addressing some of these issues.	Bedok West Primary School	Nurizan Abdul Wahab

Chemistry

No	Title	Abstract	School	Author
1	Using Direct Vocabulary Instruction to Improve Students' Understanding of Chemistry Concepts in a Singapore Secondary School	<p>Chemistry is the study of particles that students cannot see or touch. Key chemistry concepts are embedded in the vocabulary of chemistry. However, the moment misconceptions develop in their minds, students cannot correctly apply these concepts when needed. This often shows up in their poor understanding in class work and their poor performance in tests and examinations.</p> <p>This research study describes how Direct Vocabulary Instruction (DVI), based on the work of Marzano (2004), was employed to overcome students' misconceptions in chemistry. Marzano (2004) labels what students already know about the content as their academic background knowledge. He says that the amount of academic background knowledge a student has is one of the strongest indicators of how well he or she will learn new information. This is because what students already know (their background knowledge) helps them to effectively process and store new content knowledge.</p> <p>In this research study we used DVI to focus our attention on developing students' explicit understanding of fundamental chemistry concepts, which are embedded in key chemistry terms or terminologies. Students' initial understandings of these terms then served as the basis for further concept development. A simplified version of Marzano's DVI was implemented in a third year class via a series of five Action Research Cycles. Our adopted simplified DVI approach comprises of five main steps. First, we identified the set of key terms that a student should learn. Second, we describe and explain what the chemistry term means. Third, we get our students to restate the description or explanation of the term in their own words. Fourth, students are then asked to draw a picture, symbol or graphic representing the new term. Fifth, the meanings of these terms are then reinforced through classroom activities and opportunities for students to discuss them.</p>	Bedok View Secondary School	Syed Alwi Alattas & Koh Shu Hui Sharon

2	Using a Dialectic Soft Systems Methodology (DSSM) to construct a Template for Answering Organic Deductive Questions in Advance Level Chemistry	Organic deductive questions are examined regularly in major examinations. However many students find it difficult to grasp the techniques of answering organic deductive questions and thus unable to score in examinations. This paper reveals the application of Dialectic Soft Systems Methodology in constructing a template for helping college students in answering Organic Deductive Questions in Advance Level Chemistry Examination. Apart from serving as a guided and structured approach for memorizing chemical reactions, frequent practice in its manipulation enables the students to acquire the necessary skills for answering deductive Organic Chemistry questions in examinations. This in turn empowers their knowledge in organic chemistry to go beyond a nodding acquaintance with notions and notations.	Temasek Junior College	Aileen Lim Low Kian Seh Tearle Cheng Tng Miao Hui Li Xuanjun
3	Using Action Research to evaluate the different modes of engaging college student in learning Chemistry	This paper reveals three main intentions of this research work. First, it offers a set of useful modes for engaging college student in learning Chemistry in a lecture setting with more than six hundred of students. This effort is carried out with a view to help college students to improve their comprehension, analytical and time management skills in order to obtain quality grades (A and B grades) in performance test. Second, this paper describes the application of Action Research to evaluate the effectiveness of each mode of engagement. Finally, the authors have consolidated their findings and turned the set of different modes of engagement into a Framework-for-Practice to facilitate college students' Chemistry learning and revision.	Temasek Junior College	Chua Yock Lan, Tay Sen Ai, Liew Shuxian, Sim Hui Shan, Tan Minyi Shawn, Yeow Chern Ee, Tan Kuang Shing, Low Kian Seh, Zubaidah Lokman Lim Kah Kiat

Physics

No	Title	Abstract	School	Author
1	Motivating Students Towards Knowledge Building Using Knowledge Constructor	<p>This paper addresses three interesting areas of learning. Firstly it gets to the core of applying Knowledge Building Constructor (an online forum) with THINK cycle (a special problem-based learning tool) incorporated to facilitate and induce independent learning in Junior College students. Students from a Physics class, who have been taught mainly through the didactic lecture-tutorial system, were tasked to solve an authentic real life problem. In the process, they acquired their independent learning skills through forum discussions, hypothesis generation, recommendations, reflection logs, and group reports submission. Secondly, it demonstrates the close links between Gardella and Tong (2002)'s Linguistic considerations in the acquisition and teaching of mathematics and that of Physics adopted in this research study. The learning of physics begins with physical realities and language that are familiar to students and allow them to internalise the concepts. After this is established on a learning/ language continuum, the vocabulary and formalism, so important in the communication and application of physics can be addressed. Thirdly, it demonstrates the phenomenological nature of Action Research via an integration of action and thought as described in the work of Tay (2003). The "action" phase adopts the natural attitude whereas the "thought" phase adopts the phenomenological attitude such that the "world" and the "mind" are correlated with one another to provide an ultimate dual, elliptical context for everything associated in this research study.</p>	Temasek Junior College	<p>Teo Lei Soo Eunice & Tan Hwee Lynn Cyrene</p>

Art

No	Title	Abstract	School	Author
1	My Personal Action Research Journey to Enhance Art Discussion Syllabus for Lower Secondary Level of a Singapore School.	As pointed by Dick (2001) and the personal experience reflected in this research study, Action Research (AR) is true to label. It pursues both action (change) and research (understanding) outcomes. It achieves change through its participative approach, often in conjunction with other change processes. This research study is achieved by being responsive to the situation and by searching strenuously for disconfirming evidence, and by narrowing down the identified gaps brought about by these disconfirming evidences. At the heart of this personal journey to enhance the Art Discussion Syllabus, is a series of five AR cycles with each cycle that alternates action and critical reflection. Action and research enhance each other.	Chung Cheng High School (Main)	Yap Kheng Kin

Special Education Needs

No	Title	Abstract	School	Author
1	An Action Research Journey in Engaging Special Educational Needs (SEN) Students in the Upper Primary Level in a Primary School	<p>“Every child matters” – This is our team’s collective motivation that drives us to increase the level and quality of SEN (Special Educational Needs) inclusion within the mainstreams of our school, while protecting and enhancing specialist provision for those who need it. The ultimate purpose of SEN provision is to enable these SEN children to flourish in adult life as highlighted by Farrell (2008). This paper looks into ways of creating a greater awareness amongst our teachers in the needs of Special Educational Needs (SEN) students. We also look into ways to engage and benefit these learners in the Upper Primary Level in Pasir Ris Primary School. This is done with the view to enhance the academic performance of these learners and to help meet their individual needs. The research is also done with the aim of helping such learners be immersed in the mainstream. Learners with special needs have learning difficulties which slow down their learning as compared to their peers. These learners require additional learning support.</p>	Pasir Ris Primary School	Jayanthi Retnam, Jaspal Kaur, Jalene Lim, Agnes Lim, Venetia Lim

Time Management

No	Title	Abstract	School	Author
1	A Time Management Model for JC Students' Academic Performance & Well-Being	This paper offers a Time Management Model (TMM) which teachers can use to help students in their pursuit for academic success and personal well-being. Our TMM is the outcome of a research undertaken by the Student Welfare Department of Temasek Junior College during the period from January 2008 to August 2008 to address students' topmost concern which is time management. Apart from improving our educational practice, TMM also enhances students' social-emotional competencies, specifically in self-awareness, self-management and responsible decision-making domains. Quantitative and qualitative feedback from our case study based on TMM was positive and hence, we hope that our model will benefit fellow educators.	Temasek Junior College	Goh Ai Lian Lee-Lim Li Lian Ho Foo Him Leong Siew Kheng Joyce Teo