

# TeLeS

ISSN 2348-8409

VOLUME. : 19    NUMBER : 02    SEPTEMBER - 2019

## Journal of Teacher Learner and Society

---

## Teacher Learner and Society (TeLeS)

Print ISSN 2348-8409 Volume 19, Number 2, September 2019

### MANAGING EDITOR

Mohamed Ali, Secretary, Muslim College of Education, Kanniyakumari District, Tamil Nadu -INDIA

### EXECUTIVE EDITORS

Radharamanan Pillai, The Addis Ababa University, Ethiopia

Pramod. V. S. Muslim College of Education, Kanniyakumari District, Tamil Nadu -INDIA, *The TNTEU University*

### EDITORIAL BOARD

**Dr. Yechale Kebede Bizuneh**

Vice -President, Arbaminch University, Ethiopia, AFRICA

**Dr. Emerson Cabudol**

Faculty Member, Business Department, Higher College of Technology, Women's College, Al Ain, UAE

**Dr. Zaheer Abbas**

Faculty of Management Sciences, International Islamic University, PAKISTAN

**Dr.N.Janardhanan**

Head, Centre for Post Graduate Studies and Research in English, Muslim Arts College, Tamil Nadu, INDIA

**Prof. Jayaraman**

Professor, Centre for Post Graduate Studies and Research in English, Muslim Arts College, Tamil Nadu, INDIA

**Dr R. Ramesh Reddy**

Professor, Department of Civil Engineer, Arba Minch University, ETHIOPIA

**Dr. Ahmed Mahmud**

Lecturer, Department of English Language and Literature, Madda Walabu University, ETHIOPIA

**Dr. Mohammed Kawo**

Lecturer, Department of English Language and Literature, Madda Walabu University, ETHIOPIA

**Dr. Tesfaye Alemu**

Professor, Department of English, Arba Minch University, ETHIOPIA

**Dr. Reji. D. Nair** Faculty Member, Business Department,  
Higher College of Technology, Women's  
College, Al Ain, UAE

**EDITORIAL ADVISORY BOARD**

**Dr. A. Sukumaran Nair** Formerly Vice-Chancellor, M.G. University,  
Kottayam, Kerala, INDIA

**Dr. R. Sukumaran Nair** Formerly Faculty & Deann Sree  
Sankaracharya University of Sanskrit  
Kerala, INDIA

**Dr. C. P. Sreekandan  
Nair** Faculty & Deann Sree Sankaracharya  
University of Sanskrit Kerala, INDIA

**Dr. S. Mani** Professor & Head, Dept. of Educational  
Planning and Administration, Tamil Nadu  
Teachers Education University, Chennai,  
Tamil Nadu, INDIA

**Dr.N.Ramakrishnan,** Professor & Head Dept. of Educational  
Technology, Tamil Nadu Teachers Education  
University, Chennai, Tamil Nadu, INDIA

**Dr. P. Ganesan** Professor and Head, Department of  
Pedagogical Sciences, Tamil Nadu Teachers  
Education University, Chennai, Tamil Nadu,  
INDIA

**Dr.Albukak** University of Dublin, IRELAND

**Dr. Madhavan** Professor of English and Foreign Languages  
University Hyderabad, INDIA

**Dr. M. Soundararajan** Professor and Head, Department of Value  
Education, Tamil Nadu Teachers Education  
University, Chennai, Tamil Nadu, INDIA

**Dr. G. Baskaran,** Professor & Dean Faculty of English &  
Foreign Languages, Gandhigram Rural  
Institute Deemed University, INDIA

**Dr. Balasubramanyam,** Formerly Vice-Chancellor, Bharatiyar  
University, Coimbatore, Tamil Nadu, INDIA

<b>Dr. K.A. Janardhanan</b>	Human Resource Manager, Noorul Islam University, Nagercoil, Tamil Nadu, INDIA
<b>Dr. Omer Al-Buk</b>	Dean of Humanities and Social Science, 7th October University, LIBYA
<b>Dr. Selvinkumar</b>	Vice Chancellor International Tamil University, USA
<b>Dr. S. Pakiam</b>	Formerly Registrar of Manonmaniam Sundaranar University. Tamil Nadu, INDIA
<b>Dr. James R. Daniel</b>	Formerly Principal, Scott Christian College, Nagercoil. Tamil Nadu, INDIA
<b>Dr. B. Sobhanan</b>	Formerly Professor and Head in History, Kariavottom Campus, University of Kerala, INDIA
<b>Dr. Taregn Tedesse</b>	President, Science and Technology, University of Addis Ababa, ETHIOPIA
<b>Dr. Prem Khattry</b>	Formerly Professor , Tribhuvan University, Federal Democratic Republic of NEPAL
<b>Dr. K.Y.Benedict,</b>	Principal, Martheophilus Training College, Trivandrum, Kerala, INDIA

Teacher, Learner and Society (TeLeS) is a peer reviewed National Journal is an innovative venture of the Muslim Educational Society (MES), No 1 New Street, Thiruvithancode, Kanniyakumari District, Tamil Nadu, INDIA. The TeLeS is published two times a year, i.e. in March and September. Special volume is published every year in connection with the international conference.

### Subscription rates

Institutional: Indian 1500 INR; Foreign 23 US \$ for single copy.  
Individual: Indian 1000 INR; Foreign 15 US \$ for single copy.

### Ordering Information:

Subscription amount to be sent through Bank Draft drawn in favour of Mrs. S. Anitha Mary, (+917402735588) payable at IDBI, Thuckalay, Account Number 157910 400 00 30773 and IFS code- IBKL 0001579. Subscriptions purchased at the personal rate are strictly for personal, non-commercial use only. The reselling of personal subscriptions is prohibited. Personal subscriptions must be purchased with a personal cheque or credit card. Proof of personal status may be requested. For more information on our sales packages please visit <http://www.muslimcollegeofeducation.com> Older volumes are held by our official stockists to whom all orders and enquiries should be addressed: Email : [muslimcollegeofeducation@gmail.com](mailto:muslimcollegeofeducation@gmail.com) or Tel: +91 7402735588 , +91 7402735503.

**Copyright** 2013 Dr. H. Mohamed Ali, General Secretary, Muslim Educational Society, Kanniyakumari District, Tamil Nadu -INDIA. All rights reserved. No part of this publication may be reproduced, stored, transmitted, or disseminated, in any form, or by any means, without prior written permission from Dr. H. Mohamed Ali, to whom all requests to reproduce copyright material should be directed, in writing.

**Disclaimer:** Muslim College of Education and our publisher Dr. H. Mohamed Ali, make every effort to ensure the accuracy of all the information (the "Content") contained in our publications. However, Muslim College of Education and our publisher Dr. H. Mohamed Ali, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. **Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Muslim College of Education and our publisher Dr. H. Mohamed Ali.** The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Muslim College of Education and our publisher Dr. H. Mohamed Ali, shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content. Terms & Conditions of access and use can be found at [http:// www.Muslimcollegeofeducation.com](http://www.Muslimcollegeofeducation.com) (under the title - Journals). We grant authorization for individuals to photocopy copyright material for private research use, on the sole basis that requests for

such use are referred directly to the requestor's local Reproduction Rights Organization (RRO).

Subscription records are maintained at Muslim College of Education (MCE), No 1 New Street, Thiruvithancode, Kanniyakumari District, Tamil Nadu INDIA.

For further information about our journals please visit <http://www.muslimcollegeofeducation.com> or Email: [muslim.college.of.education@gmail.com](mailto:muslim.college.of.education@gmail.com) (muslim + college of education + @ gamil.com).

### **Official Publisher**

Teacher, Learner and Society (TeLeS) is published Biannually in March, and September by The Kumari Press and Publication Division, Monday market, Thuckalay, Kanniyakumari District Tamil Nadu, INDIA. Please note: There is no other Teacher, Learner and Society (TeLeS) issues with this ISSN 2348-8409.

### **Guidelines for contributors**

Teacher, Learner and Society (TeLeS) is a peer reviewed journal, which is designed to publish research articles in, Education, Mathematics, Management, Medical Sciences, Medicine, Social Science, Agriculture, Geography, Advertising, Accounting & Finance, Botany, Business Research, Chemistry, Commerce, Computer Application, Consumer Behaviour & Relationship Management, Corporate Governance, Earth Sciences, Economics, E-commerce, Bioscience, Entrepreneurship, Fisheries, History, Human Resources Management, Information Technology, Library Science, International Business, Law / Criminology, Life Sciences, Logistics and Supply Chain Management, Performing Arts, Physics, Psychology, Health Care, Fine Art, Industrial Relations, Architecture, Marketing communication, Marketing Management, Microbiology, Nursing / Pharmacy, Nutraceuticals, Physical Education, Philosophy, Political Sciences, Psychology, Population Studies, Selling and Marketing techniques, Strategic Management, Total Quality Management Training and Development, Sociology, English, Veterinary Sciences, Apiology, Arachnology, Arthropodology, Cetology, Conchology, Mosquito Taxonomical Studies, Vector (Mosquito) Biology, Vector Ecology, Prevention and Control of Mosquito/Vector-Borne Diseases, Vector Competence of Vector-Borne Diseases, Renewable Energy, Biopesticides/Botanical Insecticides in Vector Control and Management, Biological Control of Vector Mosquitoes, Vectors "Parasite Interaction, Epidemiology, Parasitology, Surveillance and Control Technology of Vectors, Applied Fields of Mosquito Research, Entomology, Helminthology, Herpetology, Ichthyology, Malacology, Myrmecology, Nematology, Neuroethology, Ornithology, Paleozoology, Planktology, Primatology, Zooarchaeology, Zoosemiotics, Engineering & Technology Vector Molecular Biology, Molecular Endocrinology, Parasitology and Immunobiology. The Editorial Board invites articles, research papers, book reviews and commentaries on contemporary issues in a variety of areas. Any local contextualization must be explained and defined so that an international readership can clearly follow the argument. Please ensure to avoid all stereotypes with regard to class, gender, caste, race, among others.

**Peer Review:**

All contributions submitted for publication are subject to peer review. To enable anonymous refereeing, authors are requested to submit their personal details like: name, e-mail ID, institution address, contact mobile number etc. on a separate sheet, and certainly not on the text of the paper submitted for publication.

**Acceptable Formats**

Bookman Old Style(.doc) (any recent version). Word documents should be submitted as a single file. Authors should submit figures as separate files, in TIFF (.tif) or EPS (.eps) (not GIF [.gif] or JPEG [.jpg]) format. Please note that authors of accepted manuscripts may be required to submit high-resolution hard copies of all figures during production, as not all digital art files are usable. For information about writing an article, preparing your manuscript and general guidance for authors, please visit our website [http:// www.muslimcollegeofeducation.com](http://www.muslimcollegeofeducation.com) (muslim + college+ of + education + @ + gamil + .com)

**Copyright and authors' rights**

To assure the integrity, dissemination, and protection against copyright infringement of published articles, you will be asked to assign to Dr.H.Mohamed Ali. General Secretary, Muslim Educational Society, Kanniyakumari District, Tamil Nadu -INDIA., via a Publishing Agreement, the copyright in your article. Your Article is defined as the final, definitive, and citable Version of Record, and includes: (a) the accepted manuscript in its final form, including the abstract, text, bibliography, and all accompanying tables, illustrations, data; and (b) any supplemental material hosted by Dr.H.Mohamed Ali. General Secretary, Muslim Educational Society, Kanniyakumari District, Tamil Nadu -INDIA. Our Publishing Agreement with you will constitute the entire agreement and the sole understanding between Dr.H.Mohamed Ali. General Secretary, Muslim Educational Society, Kanniyakumari District, Tamil Nadu -INDIA. and you; no amendment, addendum, or other communication will be taken into account when interpreting your and Dr.H.Mohamed Ali. General Secretary, Muslim Educational Society, Kanniyakumari District, Tamil Nadu -INDIA. Copyright policy is explained in detail in our website [http:// www.muslimcollegeofeducation.com](http://www.muslimcollegeofeducation.com) (muslim + college+ of + education + @ + gamil + .com)

**Reprints**

Corresponding authors can receive a complimentary copy of the issue containing their article. For enquiries regarding reprints, please contact us. For further information about our journals please visit our website [http:// www.muslimcollegeofeducation.com](http://www.muslimcollegeofeducation.com) (muslim + college+ of + education + @ + gamil + .com)

If you are unable to access our websites, please write to: Dr. H. Mohamed Ali.  
Muslim College of Education (MCE), No 1 New Street, Thiruvithancode,  
Kanniyakumari District, Tamil Nadu INDIA.

Teacher, Learner and Society (TeLeS) is published by The Kumari Press and  
Publication Division, Monday market, Thuckalay, Kanniyakumari District,  
Tamil Nadu, INDIA.

Total Pages 59



## Table of Contents

SL. No	Contents	Pages
1	<b>ICT In Education: The Indian Perspective</b> Dr. SIVAKUMAR	1-10
2	<b>Phytochemical analysis showing normal and diseased Leaves of Psidiumguajava</b> GEETHA R. NAIR	9-16
3	<b>Diverse Learners in The Class Room</b> Dr. V. MEENAMBIKAI	17-23
4	<b>Classroom Management</b> M. SAVITHA	24-30
5	<b>Strategies for Effective Classroom Management</b> T. LOUDI GRACY ARULMANI	31-37
6	<b>In Vitro Studies on Antioxidant Properties of Gallic Acid from Mangifera Indica</b> Dr. L. ANILA	38-48
7	<b>Attitudes and Skills in Learning</b> Dr. J. JEBASELVI	49-54
8	<b>Open book test: A tool to analyze diverse learners in a class room</b> VINOLIYA MARY METTILDA	55-59

---

## Phytochemical analysis showing normal and diseased Leaves of Psidiumguajava

GEETHA.R. NAIR

*Assistant Professor, Department of Botany, N.S.S College, Nilamel, Kerala*

The ethanolic extracts of normal and diseased leaves of Psidiumguajava Linn. (Myrtaceae) were used in the present. Phytochemical screening of the plants showed the presence of phenolic compounds, tannins, alkaloids, glycosides, steroids etc. While flavonoids are absent in diseased plants.

**Key words:** Psidiumguajava, Phytochemical screening.

### Introduction

Disease is the manifestation of reaction between the plant and disease-causing agent or any impairment of normal physiological function affecting an organism. Infectious diseases are caused by living agents, the pathogen. The Common transmissible agents or pathogens that because infectious diseases may be fungi, viruses, mycoplasmas or even insects. Non-infectious disease cannot be transmitted from one diseased plant to another healthy plant. It is caused due to improper conditions of the soil, air or mechanical injury. It may also due to too high or low temperature, lack or excess of light, lack of oxygen, nutrient deficiencies, soil acidity or alkalinity, toxicity of pesticides etc. In Psidium the pathogen is Cephaleuros.

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

The pathogen reproduce and survive in spots on leaves or stems and in fallen plant host debris. There are two main types of symptoms on Guava leaves: velvety spots and non-velvety spots. Phytochemicals are non-nutritive plant chemicals that have protective or disease preventive properties. Some of the well-known phytochemicals are lycoprene, isoflavones Flavonoids etc.

A large number of secondary metabolic compounds are also present in Psidium. They are alkaloids, flavonoids, terpenoids, saponins tannin, glycosides etc.

## Materials and Methods Collection of materials

The plant selected for the study was healthy and diseased plants of Psidiumguajava. Care was taken to select healthy and diseased plants. The fresh leaves are collected from its natural habitat and thoroughly washed to remove impurities. Leaves of both healthy and diseased plant were dried in shade, powdered separately using domestic grinder and stored air-tight containers. The powder was then extracted with methanol. This was then used for phytochemical analysis.

## Phytochemical analysis

Preliminary phytochemical tests were carried on extract of the specimen using the solvent, methanol to detect various constituents present in them. The preliminary phytochemical analysis was carried out according to the methodology of Harborne (1984).

### Detection of carbohydrates:

#### Benedict 's test:

To 0.5 of filtrate, 0.5 of Benedict's reagent was added. The mixture was heated on a boiling water bath for 2 minutes. A characteristic coloured precipitate indicates the presence of carbohydrates.

#### Benedict 's reagent:

About 173 gm of sodium citrate and 100 gm of sodium carbonate was dissolved in 800ml of distilled water and boiled to make it clear. Then 17.3gm of copper sulphate was dissolved in 100ml of distilled water and was added to the above solution.

#### Detection of Saponins:

A little of the extract is shaken with distilled water, if there is froth formation which for a few minutes; this shows the presence of saponins.

#### Detection of Coumarins:

To the test solution add a few ml of alcoholic sodium hydroxide solution. The appearance of intense yellow colour on addition of concentrated hydrochloric acid indicates its presence.

#### Detection of Terpenoids

##### Stokowski test:

5ml of the extract were mixed with 2ml of chloroform and 3ml of concentrated sulphuric acid solution. A reddish – brown colour at the interphase shows the presence of terpenoids.

#### Detection of Alkaloids:

##### Mayer's test:

To a few ml of filtrate add one or two drops of Mayer's reagent along the sides of the test tube. A white or creamy precipitate indicates the presence.

### Mayer's reagent:

About 1.36gm of mercuric chloride is dissolved in 60ml of distilled water and 5gm potassium iodide is also dissolved in 10ml of distilled water. The two solutions are mixed and made up to 100ml distilled water.

### Detection of Tannins:

#### Ferric chloride test:

To a few ml of extract add 100% Ferric chloride solution. The appearance of blue or green colour indicates the presence of condensed tannins.

### Detection of Phenol's:

#### Shino do test:

The methanol extract is treated with magnesium turnings followed by concentrated hydrochloric acid which is added in drops. The appearance of pink scarlet or intense red or green to blue colour indicate the presence.

To a few ml of aqueous extract, add dilute ammonia and concentrated sulphuric acid along the sides of the test tube. Yellow colouration indicated the presence of phenolic compounds.

### Detection of Cardiac Glycosides (Keller-Killani test)

5ml of the extract is treated with 2ml of glacial acetic acid containing 2-3 drops of Ferric chloride solution and 1ml of concentrated sulphuric acid solution. A green ring initially appears which turns to violet and then brown and the interphase indicates the presence of cardiac glycosides.

### Detection of Flavonoids (Alkaline reagent test)

To the test solution add a few drops of sodium hydroxide solution, an intense yellow colour is formed which later turns to colourless on adding a few drops of dilute acid indicates the presence of flavonoids.

### Shinodo Test

The methanol extract is treated with magnesium turnings followed by concentrated hydrochloric acid which is added in drops. The appearance of pink colour indicate the presence. To 2ml of aqueous filtrate add 5ml of dilute ammonia and concentrated sulphuric acid along the sides of the test tube. Appearance of yellow colour indicates the presence of flavonoids.

### Result

The phytochemical analysis shown above reveals the following:

In both healthy and disease affected plants, constituents like alkaloids, terpenoids, tannins, glycosides etc. are present while flavonoids are absent in disease affected plants. The result is tabulated in Table:1

Sl No	Constituents	Normal	Diseased
1	Alkaloids	+	+
2	Flavonoids	+	–
3	Tannins	+	+
4	Glycosides	+	+
5	Saponins	+	+
6	Terpenoids	+	+
7	Phenolic compounds	+	+

Table 2. Quantitative Estimation of Polyphenol Oxidase in Psidiumguajava

LEAVES	AMOUNT
Healthy	0.8
Disease Affected	1.52

## Discussion

The present study was done to compare the morphological and phytochemical differences seen in Guava plants affected by disease with the normal healthy. The morphological variations are the following:

Cephaleurosparasiticus spots on guava leaves appear initially as tiny, dark brown specks that enlarge into roughly circular lesions with ash coloured centres and dark brown to blackened margins. Spots on Guava leaves are intercellular necrotic, destroying both upper and lower epidermal cell layers and intervening tissues. The methanolic extract of both the healthy and diseased plant leaves showed the presence of phenolic compounds, tannins, alkaloids, glycosides, etc. while flavonoids are absent in diseased plants. These chemicals are responsible for anti-allergic, anti-inflammatory, anti-microbial, anti-cancer, anti-diarrheal activities etc. (5) The different chemical compounds detected in the plant could make the plant useful for treating different ailments and having a potential of providing useful drugs for human use.

## Reference

- A.K. Misra, "Guava Diseases-their symptoms, causes and management" *Diseases of Fruits and vegetables*: Volume II 2004, pp.81-119.
- Girish Kumar Gupta, Jagbir Chahal, Deeksha Arora Psidiumguajava Linn: "Current Research and Future Prospects Journal of Pharmacy Research" 01/2011;4: 42-46

---

## ICT In Education: The Indian Perspective

Dr. SIVAKUMAR

*Principal, CK College of Education, Cuddalore*

Education is the most effective instrument which can instill people with the knowledge, skill and capability to observe and analyze the sense of purpose and confidence for building a dynamic energetic, just and unified nation able to take care of its entire people. Education does not have accumulation of information as its terminus. It should engender wisdom, which comprises tolerance, understanding, compassion and large-heartedness in outlook. Perhaps, this is what Plato meant when he said that the purpose of education is “not to fill an empty vessel but to turn the eye of the soul towards light”.

### Information & Communication Technology

ICTs stand for information and communication technologies and are defined as a “diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. Information technology defines an industry that uses computers, networking, software programming, and other equipment and

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*



processes to store, process, retrieve, transmit, and protect information.

## Growth of Higher Education in India

India's higher education system is the third largest in the world after China and the United States. Since independence the higher education in India has increased manifold in its institutional capacity as can be observed from the given table:

Table 1.  
Institutional Capacity expansion in Higher Education

Institutional capacity indicator	1950	2008
Number of University Level Institutions (including 11 Private University)	25	431
Number of Colleges	700	20,677
Number of Teachers	15,000	5,05,000
Number of Students Enrolled	1,00,000	1,16,12,000

## The Aim of Involvement of ICT In Education

For developing countries like India, ICTs have the potential for increasing access to and improving the relevance and quality of education. It thus represents a potentially equalizing strategy for developing countries. ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries

unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business and the poor.

One of the greatest hardships endured by the poor, and by many others, who live in the poorest countries, is their sense of isolation. The new communications technologies promise to reduce that sense of isolation, and to open access to knowledge in ways unimaginable not long ago. However, the reality of the Digital Divide—the gap between those who have access to and control of technology and those who do not—means that the introduction and integration of ICTs at different levels and in various types of education will be a most challenging undertaking. Failure to meet the challenge would mean a further widening of the knowledge gap and the deepening of existing economic and social inequalities. The multifaceted aim of involvement of ICTs in education may be given as follows:

ICTs for expanding access to education.

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Anytime, anywhere.

One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners.

## Access to remote learning resources.

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons— mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

## ICTs for better Grooming of Students for the modern workplace.

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs, particularly computers, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market. Technological literacy, however, are not the only skill well-paying jobs in the new global economy will require.

### a) ICTs to improve the quality of education.

Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways as follows:

- Motivating to learn:

ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used

to provide challenging and authentic content that will engage the student in the learning process. Computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

- Facilitating the acquisition of basic skills.

The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice. Most of the early uses of computers were for computer-based learning (also called computer-assisted instruction) that focused on mastery of skills and content through repetition and reinforcement.

- Enhancing teacher training

ICTs have also been used to improve access to and the quality of teacher training. Institutions are taking advantage of the Internet to provide better teacher professional development opportunities to inservice teachers. At Indira Gandhi National Open University, satellite-based one-way video- and two-way audio-conferencing was held in 1996, supplemented by print-materials and recorded video, to train 910 primary school teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax. In China, large-scale radio and television-based teacher education has for many years been conducted by the China Central Radio and TV University.

- ICTs to transform the learning environment into one that is learner-centered.

Research has shown that the appropriate use of ICTs can catalyze the paradigmatic shift at the heart of education reform in the 21st century. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning .When used appropriately, ICTs—especially computers and Internet technologies— enable new ways of teaching and learning rather than

simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy—in its worst form characterized by memorization and rote learning—to one that is learner-centered.

## Forms of ICTs in Education

### Radio and TV Broadcasting.

Radio and television have been used widely as educational tools since the 1920s and the 1950s, respectively. There are three general approaches to the use of radio and TV broadcasting in education:

- (a) Direct Class Teaching: Where broadcast programming substitutes for teachers on a temporary basis.
- (b) School Broadcasting: Where broadcast programming provides complementary teaching and learning resources not otherwise available.
- (c) General Educational Programming Over Community: National and international stations which provide general and informal educational opportunities.

### Teleconferencing.

Teleconferencing refers to “interactive electronic communication among people located at two or more different places.” There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology:

- (a) Audio conferencing involves the live (real-time) exchange of voice messages over a telephone network.
- (b) Audio-graphic conferencing: When low-bandwidth text and still images such as graphs, diagrams or pictures can also be exchanged along with voice messages, then this type of conferencing is called audio graphic. Non-moving visuals are added using a computer keyboard or by drawing/writing on a

graphics tablet or whiteboard.

- (c) Videoconferencing allows the exchange not just of voice and graphics but also of moving images. Videoconferencing technology does not use telephone lines but either a satellite link or television network (broadcast/cable).
- (d) Web-based conferencing, as the name implies, involves the transmission of text, and graphic, audio and visual media via the Internet; it requires the use of a computer with a browser and communication can be both synchronous and asynchronous.

Teleconferencing is used in both formal and non-formal learning contexts to facilitate teacher-learner and learner-learner discussions, as well as to access experts and other resource persons remotely. In open and distance learning, teleconferencing is a useful tool for providing direct instruction and learner support, minimizing learner isolation.

## Computers and the Internet for Education.

There are three general approaches to the instructional use of computers and the Internet, which are as follows:

### (a) Learning about computers and the Internet.

Learning about computers and the Internet focuses on developing technological literacy. It typically includes:

- Fundamentals: basic terms, concepts and operations
- Use of the keyboard and mouse
- Use of productivity tools such as word processing, spreadsheets, and data base and graphics programs
- Use of research and collaboration tools such as search engines and email
- Basic skills in using programming and authoring applications such as Logo or Hyper Studio
- Developing an awareness of the social impact of technological change.

(b) Learning with computers and the Internet.

Learning with the technology means focusing on how the technology can be the means to learning ends across the curriculum. It includes:

- Presentation, demonstration, and the manipulation of data using productivity tools.
- Use of curriculum-specific applications types such as educational games, drill and practice, simulations, tutorials, virtual laboratories, visualizations and graphical representations of abstract concepts, musical composition, and expert systems.
- Use of information and resources on CD-ROM or online such as encyclopedia, interactive maps and atlases, electronic journals and other references. Technological literacy is required for learning with technologies to be possible, implying a two-step process in which students learn about the technologies before they can actually use them to learn. However, there have been attempts to integrate the two approaches.

(c) Learning through computers and the Internet.

Learning through computers and the Internet combines learning about them with learning with them. It involves learning the technological skills “just-in-time” or when the learner needs to learn them as he or she engages in a curriculum-related activity.

## Role of Teachers in ICT Environment

Learning and Teaching has undergone a tremendous change due to the emerging technologies. Because of the advances in the technologies, the teaching profession is evolving from an emphasis on teacher-centered, lecture based instruction to student-centered, interactive learning environments. The responsibility of the teacher has changed from knowledge transmitter to that of learning facilitator, knowledge guide and co-learner with the students in ICT environment. The modern teacher in the ICT age acts as a guide rather than a knowledge transmitter. In fact, with the introduction of ICTs in the classroom, we can say that the teaching and learning process has been modified from blackboard to keyboard..... from pen to pen drives.....and from chalk to mouse.....

Because of the rapid change and uncertainty, there is one thing of which we can be sure, that the teachers need to adapt to change if

they are to survive and keep pace with new methods and technologies. The teachers should adapt current teaching skills and practice to accommodate the introduction of ICT in all their academic efforts. These efforts are in bringing changes in teaching methodology, assessment of learning, student tracking, communication and evaluation.

## ICT in Education: The Indian Perspective

Though the potential and capability of open and distance learning was realized in early sixties across the globe however, it got national acceptance and recognition with the emergence of Indira Gandhi National Open University in 1985.

IGNOU and ISRO share a common vision of creating Educated India. And to achieve this, ISRO and IGNOU have been collaborating in the use of satellite communication to enrich learning processes and increase access to education through distance mode. Under ISRO-IGNOU collaboration, IGNOU has developed capability for four TV-channels and two interactive networks dedicated for education. In order to fulfill the requirements of education for all, the Indian Parliament took a major decision in the year 2001 whereby education was made compulsory for every Indian in the age group of 6 to 14 years.

This task is to be accomplished by the year 2015 under the initiative SarvaShiksha Abhiyan. The massive educational setup required to handle such large numbers requires development of effective satellite communication systems with extensive point-to-point reach covering the whole country. In this initiative, some successful joint interventions between ISRO and IGNOU and a few other educational institutions and organizations propelled the idea of designing and developing a dedicated satellite for education by ISRO. Within a short period of less than 2 years, ISRO successfully designed, developed and launched a dedicated geo-stationary satellite on September 20, 2004, EduSat, dedicated exclusively for Education. India is unique in the world in this respect and it is expected that this capability will immensely support the mission to provide seamless education and to accomplish the target of education for all. Overall, India is graduating at a steady pace towards implementation of various ICTs at all levels of education which will soon be taken as a standard by other countries desirous of achieving this goal.



## Conclusion

The one fact that emerges in the relatively brief history of ICT use in education is that “It is not the technology but how we use it”. Technology should not drive education; rather, educational goals and needs, and careful economics, must drive technology use. Only in this way can educational institutions in developing countries effectively and equitably address the key needs of the population, to help the population as a whole respond to new challenges and opportunities created by an increasingly global economy. Indian Education System has a bright future in terms of Information & Communication Technology, as that it will enhance the speed of providing education even to remote areas of the country. Let’s wait for the dawn when education will become a familiar term to all the Indians....

## References

- Agarwal, Shailja; Mital, Monika, 2009. “An Emploratory Study of Indian University Students” *Use of Social Networking Web Sites: Implications for the Workplace*.
- Ali Amjad, 2001. “Internet and University Libraries”, *University News*, 39(17),
- Angelo S J Fr Rex, 2009. “Rethinking Pedagogy for Our Digital Age”, *University News*, 47(06),
- Annie James (2005). “Teaching of mathematics, Neel Kamal publications” Pvt. Ltd. New Delhi.
- BaruahKuin, 2001. “Information Society and its Impact”, *University News*, 39(13).

---

## Diverse Learners in The Class Room

Dr.V.MEENAMBIKAI

*Principal i/c, Nadar Mahajana Sangam, S. Vellaichamy Nadar  
College of Education, Nagamalai*

The teacher uses the homogeneous strategies to meet out the diverse needs of the learners. There are gifted, backward, retarded, talented, and handicapped children. The teacher has the responsibility. Gender acts a vital role. Grasping power must be observed. Multimedia supplements the traditional curriculum. The teaching approach towards appreciate and accommodate the similarities and differences among the students' cultures. Learning Styles in a Diverse Classroom may be framed. Inclusive schools are essential.

**Key Words:** Diverse needs, Responsibility, Gender, grasping power, Multimedia, learning style, Teaching Strategies, Individual Differences.

### Introduction

Unity in the diversity is neither only in our India nor in our class room. There are various types of students from various Back ground various culture various economic status and various educational level also. The teacher has the responsibility to manage the diverse learners in their class room.

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

The teacher use the homogeneous strategies to meet out the diverse needs of the learners. Teaching should fulfill the requirement of inclusiveness.

## Individual Differences

No two persons are exactly alike. There is individual difference. Pupils always differ in their level of intelligence, aptitudes, likes and dislikes and in other propensities and potentialities. Different minds are to be trained by the teacher. There are gifted, backward, retarded, talented, and handicapped children. All of them should not be trained in the same manner. Knowledge of educational psychology helps the teacher to cater to individual different of children.

## Teacher responsibility

A teacher has to play the following rules for dealing H.I.children:

1. Ease the child to the floor.
2. See that is not opposite to injure himself by striking furniture or sharp comers while convulsions.
3. Turning the child's head to one side and carefully placing but never facing a folded hand kerchief of a soft object between back teeth is sometimes advised.<sup>1</sup>

## Influence of Gender

Girls are superior to boys in verbal ability they read more and write more. Boys are superior to Girls in mathematical and mechanical ability. Girls are more skilful than boys in making movements that require independent finger control, but boys excel in movements requiring strength and speed.<sup>2</sup>

## Grasping Power

In recent years we have been learning more and more about the intellectual development of children. It is clear that we have wasted many years of learning time because of the fear that students were not ready or the subject was too difficult. With exception of the

earliest stage of childhood. The truth is that almost nothing is too difficult. Jerome S. Bruner says, "The foundation of any subject may be taught to anybody at any age in some form."<sup>3</sup>

### Multimedia:

Multimedia at its best, allows us to bring the real World to the learner through the use of sound and video. Such connections to the real World serve as a factor in providing them with additional connections to other knowledge structures. At the same time, multimedia allows students to experience information through multiple modes of presentation. Such need to model learning should help to build to connections with in the learner's brain of only because multiple modes of reception will engage different areas of the learner's brain.<sup>4</sup>

### Role of Traditional Curriculum

The traditional curriculum is to appropriate and inadequate to day to pull all types of children to developmental level. It is because the individual difference lies among the students.<sup>5</sup> Techniques and technologies have been developed to eradicate the inadequacy of boosting through traditional method. The teaching approaches can be applied for the development.

### The teaching approaches

Zeichner (1992) has summarized the extensive literature that describes successful teaching approaches for diverse populations. From his review, he distilled 12 key elements for effective teaching for ethnic- and language-minority students.

1. Teachers have a clear sense of their own ethnic and cultural identities.
2. Teachers communicate high expectations for the success of all students and a belief that all students can succeed.
3. Teachers are personally committed to achieving equity for all students and believe that they are capable of making a difference in their students' learning.

4. Teachers have developed a bond with their students and cease seeing their students as "the other."
5. Schools provide an academically challenging curriculum that includes attention to the development of higher-level cognitive skills.
6. Instruction focuses on students' creation of meaning about content in an interactive and collaborative learning environment.
7. Teachers help students see learning tasks as meaningful.
8. Curricula include the contributions and perspectives of the different ethno cultural groups that compose the society.
9. Teachers provide a "scaffolding" that links the academically challenging curriculum to the cultural resources that students bring to school.
10. Teachers explicitly teach students the culture of the school and seek to maintain students' sense of ethno cultural pride and identity.
11. Community members and parents or guardians are encouraged to become involved in students' education and are given a significant voice in making important school decisions related to programs (such as resources and staffing).
12. Teachers are involved in political struggles outside the classroom that are aimed at achieving a more just and humane society.<sup>6</sup>

Appreciate and accommodate the similarities and differences among the students' cultures:

Effective teachers of culturally diverse students acknowledge both individual and cultural differences enthusiastically and identify these differences in a positive manner. This positive identification creates a basis for the development of effective communication and instructional strategies. Social skills such as respect and cross-cultural understanding can be modeled, taught, prompted, and reinforced by the teacher.<sup>7</sup>

## Learning Styles in a Diverse Classroom

Eddy (1999) describes a learning style as the way in which we prefer to organize, classify and assimilate information about the environment. That is, how do we like to learn? There is a great deal written on learning styles – and probably as many theories as there are writers on the subject. However, in their most basic form, there are three main learning styles (Eddy):

- Auditory learners prefer to receive ideas and information by hearing them. These students may struggle with reading and writing, but excel at memorizing spoken words such as song lyrics. They often benefit from discussion-based classes and the opportunity to give oral presentations.
- Visual learners prefer to receive information by seeing it. Typically these students pay much attention to detail. They are less likely to speak in class than their auditory peers, and generally use few words when they do. Outlines, graphs, maps and pictures are useful in helping these students learn.
- Kinesthetic-Tactile learners tend to learn best via movement and touch. These students are often labeled “hyperactive” because they tend to move around a great deal. Because they like movement, they may take many notes and learn best when allowed to explore and experience their environment.

It is important to note that the various styles are those preferred by learners. If we looked at complete descriptions of each style, we would probably see some of ourselves in each. But we could also probably identify our dominant style. The fact that we learn in many ways is further justification for utilizing variety of teaching approaches is so important. Understanding learning styles can help you create more inclusive classrooms where everyone has a chance to succeed. For instance, a student from a culture that teaches children to listen quietly in a classroom (or a visual learner who is uncomfortable with speaking) can be at a disadvantage when a portion of the grade is based on participation in class. Sensitive teachers can allow for group work during class to create smaller, safer environments for these students to speak and for their classroom performance to be evaluated.<sup>8</sup>

## **Inclusive school**

Inclusive practices are an integral characteristic of schools that achieve strong measures of academic success. Why? Because in inclusive schools, the following characteristics are in place:

1. Students are educated whenever appropriate in the general education classroom with teachers skilled in the content taught.
2. Access and opportunities to progress in the general education curriculum is greatly facilitated through inclusive practices.

3. High expectations for all students are the norm.
4. Instruction is differentiated to engage students on the basis of the skill sets, interests, and learning styles.
5. Teachers use flexible grouping that includes varied small group instruction, large group, and paired instruction.
6. Students are actively engaged in instruction and in their own learning.
7. Instructional accommodations and scaffolding are used to increase access to learning and academic success.<sup>9</sup>

### Strategies for working with diverse learners

A Research Review Educational research directed at working with diverse learners is replete with studies identifying best practices for closing the achievement gaps that persist by race/ethnicity, socio-economics, language, and disability. Fortunately for practitioners, there is considerable agreement on the practices that improve the academic performance of groups of students who have traditionally demonstrated lower levels of achievement than their white, Asian American, and more affluent peers. These best practices may be categorized into four broad bands of strategies that include: 1) demonstration of high expectations, 2) implementation of culturally relevant instruction, 3) establishment of caring relationships, and 4) effective parent and community involvement. None of these bands of strategies is new to the readers of this article and none are quick and easy “fixes.” Each band is a complex construct that must be considered within the specific cultural and social context of the community and the particular issues that exist in relationship to the achievement disparities in the school. This article will review the four bands of strategies and provide specific observable and measurable indicators for each one. It is important to note that the indicators cited here are not all-inclusive, but merely a sampling of behaviors and practices that are pervasive in the research.<sup>10</sup>

### Conclusions

Teacher has the responsibility of teaching all the students. Teacher can apply various strategies. Technology can be applied to full fill the individual differences. Grasping power, understanding capacity may vary according to the individual differences. There are various types of students also. Inclusive education is essential. Learning style and

Teaching strategies accomplish the need according to the class room diversity.

References:

- Bhatia P.R. "Psychology of teaching, learning process" *Anmol Publications Pvt. ltd*, New Delhi, 2005.
- Sharma. S.R, "Psychological Aspects of Teaching and Learning" *Book Enclave*, Jaipur, India, 2006.
- Vijaya Kumari Kaushik, Sharma. S. R, "Essentials of Teaching and learning" *S.D.Institute of rural Technology Science and culture*, New Delhi, 2005.



---

## In Vitro Studies on Antioxidant Properties of Gallic Acid from *Mangifera Indica*

Dr. L. ANILA

*Research Scholar, Bharatiyar University Coimbatore, Tamil Nadu, INDIA*

Polyphenolic compounds exert a variety of physiological effects in vitro and are able to act as antioxidants by virtue of their hydrogen-donating and metal-chelating capacities. Gallic acid from *Mangifera indica* kernel was isolated and identified. This article describes an approach to the study of the antioxidant activity of gallic acid. This activity is compared with a known antioxidant quercetin. The 1, 1-diphenyl-2-picrylhydrazyl (DPPH), superoxide & hydroxyl radical scavenging activities and inhibition of ferrous sulphate induced lipid peroxidation of this compound was evaluated to determine its physiological usefulness as protective against oxidative injury. Gallic acid mainly exhibited a potent scavenging effect on superoxide and 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radicals and also acted as a moderate scavenger of hydroxyl radicals. The antioxidative protection of low-density lipoprotein (LDL) was also evaluated and compared with that of quercetin, because the generation of oxidized LDL is one of the most active and specific risk factors contributing to atherogenesis.

**Keywords:** *Mangifera indica*, hydroxyl radical, DPPH radical, antioxidant, Gallic acid, serum oxidation

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

## Introduction

Flavonoids are polyphenolic components of higher plants known to be excellent antioxidants *in vitro*. Dietary flavonoids have been shown to prevent lipid peroxidation, to scavenge reactive oxygen species, to chelate iron ions, essential for the generation of hydroxyl radicals, and to inhibit NADPH-dependent oxidases and consequently superoxide anion production (1; 2; 3). Evidence for the potential role of oxidative stress in various diseases and pathophysiological processes suggests that the dietary intake and the therapeutic use of flavonoids may have positive health effects (4; 5; 6). Polyphenols are reducing agents, and together with other dietary reducing agents, such as vitamin C, vitamin E and carotenoids, referred to as antioxidants, protect the body's tissues against oxidative stress and associated pathologies such as cancers, coronary heart disease and inflammation (2; 7). The variable response to dietary flavonoids could have important physiological consequences since individual flavonoids and their metabolites have differing biological effects (8). A significant body of literature has accumulated, primarily from *in vitro* investigations, regarding the antioxidant properties of flavonoids and other plant polyphenolics (9). In recent years improved understanding of the pharmacological properties of individual flavonoid compounds has led to the developments of flavonoid drugs. Many fruits and vegetables have already been identified as good antioxidants due to the presence of good quality antioxidants like flavonoids and other polyphenolic compounds in addition to usual antioxidants like ascorbic acid,  $\alpha$ -tocopherol,  $\beta$ -carotene etc. (10). However, supplementation of these antioxidants through diet does not always meet the requirements. Effective drugs developed from natural sources come to rescue under such situations. Since 'stress' as well as 'pollution' induces the generation of toxic radicals in the body and modern man is always under the purview of these risk factors, antioxidants from diet alone may not compensate the issue. Accumulation of toxic radicals over periods can cause life threatening diseases like cardiovascular diseases and cancer. Hence it is highly demanding to unmask the best antioxidant hidden in natural sources.

## Materials and Methods

### Part A: Isolation and characterization

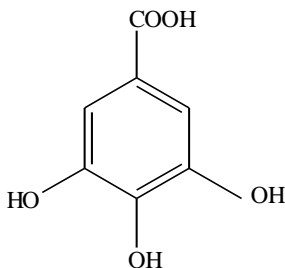
The mango kernel was air dried and the ground dried material was extracted with hot 80% methanol thrice (Petra *et al*, 1999). The

combined extract was evaporated to dryness and the residue was dissolved in water and extracted successively with hexane, benzene, ethyl acetate and n-butanol. The respective extracts were evaporated in vacuum yielding residues from hexane, benzene, ethyl acetate, and n-butanol. Ethyl acetate residue was selected for column chromatography because of its high polyphenolic content. Ethyl acetate residue was used for successive column chromatography with eluents such as hexane, chloroform, ethyl acetate, and methanol mixtures in increasing polarity and repeated column chromatography of series ( $\text{CHCl}_3$ : ethyl acetate, 1: 9) afforded the compound, which was examined further. Yield of compound was 335.2 mg/Kg.

The compound that has been obtained by column chromatographic separation and subsequent crystallization from ethanol appears to be slightly yellow colored crystals, which is soluble in methanol, ethanol and other organic solvents. It was also soluble in dilute sodium bicarbonate solution and gave indication of effervescence. This pointed to an acidic nature of the compound. For its structure identification, it was subjected to spectral analysis. Its UV-visible spectrum showed a  $\lambda$  max at 269 nm and another at  $\lambda$  396 nm. In presence of sodium hydroxide its absorption spectrum underwent a drastic change thus indicating a phenolic nature for the compound. Its UV-visible spectrum showed a shift in the  $\lambda$  max in the presence of  $\text{AlCl}_3$  (the shift observed was +44 nm) and  $\text{AlCl}_3 + \text{HCl}$  (the shift observed was + 12 nm), which is characteristics of the presence of ortho dihydroxy groups. These UV- visible spectral parameters points to the fact that the compound presently isolated could be a phenolic acid. Its IR spectrum in KBr disc showed a broad band in the region 2600- 3350  $\text{cm}^{-1}$ . This seemingly indicates the presence of OH groups in the molecule. There was a strong peak at 1700  $\text{cm}^{-1}$ , which is attributed to a carbonyl function. The  $^1\text{H}$  NMR spectrum of the compound was taken in methanol, acetone and  $\text{DMSO-d}_6$ . These spectra showed the absence of any methoxy, alkyl or alkene functionalities. There were only aryl hydrogens seen in the spectra. The  $^{13}\text{C}$  NMR spectrum also was in accordance with the above conclusion; peaks appeared only in the range 95- 167 ppm. These were at 95.73, 109.0, 120.74, 137.78, 145.18, and 167.76 ppm and are indicative of an aromatic ring bearing oxygen function. The ES- MS showed a peak at  $m/z$  188. The ES- MS was run in presence of ammonium acetate in methanol and therefore the peak at  $m/z$  188 is assigned to  $[\text{M} + \text{NH}_4]$  thereby giving 170 as the molecular mass of the compound under investigation. This is substantiated by the appearance of a peak at  $m/z$  358 which is assignable to  $[2 \text{ M} + \text{NH}_4^+]$  peak. Such cluster peaks are the hallmark

of electrospray mass spectrum. In addition, similar  $[n M + NH_4^+]$  clusters were seen at  $n$  values of 3, 4, 5, and 6 at  $m/z$  values of 528, 698, 868 and 1038, thus confirming that the molecular mass is 170.

Considering all the data above, it appears that the compound has a carbonyl, at least two hydroxyls and a benzene ring. This leads to a plausible structure of  $[2HO + C_6H_3 + COOH]$  with mass 154. If another oxygen is present as in  $C_7H_6O_5$ , then the molecule could be a trihydroxy aromatic carboxylic acid. The singlet nature of the  $^1H$  NMR peak at 7.06 indicates that the compound could be 3, 4, 5-trihydroxy benzoic acid or gallic acid. The melting point reported for gallic acid is  $251^\circ C$ ; the compound presently isolated melts at  $251^\circ C$ . Thus, the compound isolated could be conclusively identified as gallic acid.



3, 4, 5- trihydroxy benzoic acid or gallic acid

#### PART B: In vitro studies on antioxidant activities of gallic acid from *Mangifera indica* kernel

Flavonoids and other polyphenolic compounds are the most potent antioxidants. Polyphenols can form complexes with reactive metals such as iron, zinc and copper- reducing their absorption. At first glance, this may seem to be a negative side effect (reducing nutrient absorption), but excess levels of such elements (metal cations) in the body can promote the generation of free radicals and contribute to the oxidative damage of cell membranes and cellular DNA (Sestili *et al*, 2002). In addition to their chelating effect on metal cations, polyphenols also function as potent free radicals before they can cause cellular damage (Bravo, 1998; Damianakiet *al*, 2000; Fuhrman *et al*, 1995; Goldbohmet *al*, 1996; Kuo, 1997). In general, flavonoids and other polyphenolic compounds are thought to deliver health benefits by several mechanisms, including: (1) direct free radical quenching, (2) protection and regeneration of other dietary antioxidants (like vitamin E), (3) chelation of metal ions. Both metal

chelating and free radical scavenging activities have been recognized as the antioxidant mechanism for flavonoids in a biological system (Afanas'ev *et al*, 1989; Belinky *et al*, 1998). Flavonoids can act as chain breaking antioxidants by scavenging chain propagating peroxy radicals because they possess phenolic hydrogens responsible for the peroxy scavenging activity. Borset *et al* (1990) have proposed that three structural groups are important determinants for free radical scavenging; (a) the o- hydroxyl (catechol) structure in the B ring, which is obvious radical target site for all flavonoids, (b) the 2, 3- double bond in conjunction with 4- oxo function, which is responsible for electron delocalization (c) the additional presence of both 3- and 5- hydroxyl groups for maximal radical scavenging potentials and strongest radical absorption. Numerous in-vitro studies have shown that polyphenolic compounds are powerful antioxidants that can protect cell membranes and cellular DNA from the damaging effects of free radical induced oxidative damage (Sestili *et al*, 2002; Rice- Evans *et al*, 1997). Here we have used the purified gallic acid from *Mangifera indica* for in vitro studies including FeSO<sub>4</sub> induced lipid peroxidation (Tripathi and Pandey, 1999), inhibition of superoxide production (Rowley and Halliwell, 1983), antiradical efficiency (Joyeux *et al*, 1995), effect on serum oxidation (Hodgson *et al*, 1999) and inhibition on hydroxyl radical formation (Jeffery *et al*, 1989). The effects of the compound were compared with quercetin, a known antioxidant flavonoid purchased from Sigma Chemical Company, USA.

## Statistical analysis

The data given in tables and figures are the mean of the values from the number of animals specified in the respective tables and figures  $\pm$  SEM. Statistical significance was determined by One-way Analysis of Variance (ANOVA) in SPSS 10.0 package. Paired comparison between groups was made by Duncan's multiple range test. 'p' value of 0.05 or less was considered as significant. Values expressed as mean  $\pm$  SEM, for n = 6.

## Results

- Effect of gallic acid from *Mangifera indica* on FeSO<sub>4</sub> induced lipid peroxidation (fig 1):

The lipid peroxidation was inhibited by gallic acid from *Mangifera indica* in concentration dependent manner. Similarly, quercetin also inhibited in concentration dependent manner.

Concentration required to produce 50% inhibition on lipid peroxidation ( $IC_{50}$ ) was  $42.5 \pm 1.275 \mu\text{g}/3\text{ml}$  in the case of gallic acid where as it was  $44.63 \pm 1.78 \mu\text{g}/3\text{ml}$  for quercetin.

- Inhibition of superoxide production (fig 2):  
The superoxide production was inhibited by gallic acid from *Mangifera indica* in a concentration dependent manner. Concentration of flavonoid required to induce 50 % ( $IC_{50}$ ) inhibition is  $4.35 \pm 0.18 \mu\text{g}/3\text{ml}$  for gallic acid where as  $34 \pm 1.36 \mu\text{g}/3\text{ml}$  for quercetin.
- Effect of gallic acid on antiradical activity (fig 3):  
Antiradical efficiency also increased with concentration. Concentration of flavonoid required to induce 50 % inhibition ( $IC_{50}$ ) is  $3.83 \pm 0.167 \mu\text{g}/2\text{ml}$  for gallic acid from *Mangifera indica* whereas  $26.13 \pm 1.12 \mu\text{g}/2\text{ml}$  for quercetin.
- Effect of gallic acid on hydroxyl radical scavenging (fig 4):  
Gallic acid from *Mangifera indica* and quercetin showed 50 % inhibition on hydroxyl radical production at  $6.375 \pm 0.22 \mu\text{g}/2\text{ml}$ ,  $9.5 \pm 0.4 \mu\text{g}/2\text{ml}$  and  $11.063 \pm 0.47 \mu\text{g}/2\text{ml}$  respectively.
- Effect of gallic acid on serum oxidation (Fig 5):

The lag time to lipoprotein formation was measured from the plot of absorbance against time. The lag time was defined as the intercept between the tangent of the absorbance curve during the propagation phase and baseline. The lag time of compounds to lipoprotein diene formation in serum oxidation are given in table 1.

## Discussion

In vitro studies on inhibition of production of superoxides, and hydroxyl radicals, antiradical efficiency, and serum oxidation showed that gallic acid from *Mangifera indica* was highly effective antioxidant. Gallic acid from *Mangifera indica* exerted 50% inhibition ( $IC_{50}$ ) of superoxide production at a concentration of  $4.35 \pm 0.18 \mu\text{g}$  whereas quercetin showed a higher value  $34 \pm 1.36 \mu\text{g}$ . This compound also acted as efficient radical scavenger and inhibition was found to be 50 % at a concentration of  $3.83 \pm 0.167 \mu\text{g}$  for gallic acid in spite of the fairly high concentration  $26.13 \pm 1.12 \mu\text{g}$  for quercetin. This is in accordance with several other reports demonstrating the property of inhibiting autoxidation reactions and scavenging of free radicals by flavonoids (Galati *et al*, 2002). Flavonoids possess multiple properties for scavenging reactive

oxygen and nitrogen species (van Acker *et al*, 1995; Rice- Evans, 1999). Flavonoids inhibit platelet activation by interfering simultaneously with several biochemical pathways, as platelets are likely to be exposed *in vivo* to stimulation by several agents acting through different mechanisms (Beretz and Cazenave, 1988). Flavonoids can react with superoxide anions (Afanas'ev *et al*, 1989), hydroxyl radicals (Husain *et al*, 1987), and lipid peroxy radicals (Torelet *et al*, 1986). These compounds may also act by chelating iron (Afanas'ev *et al*, 1989; Morel *et al*, 1998) which is thought to catalyze processes leading to the appearance of free radicals. Kim (2001) explained the antioxidant potential of biflavones of *Ginkgo biloba* on the basis of structure-related activity and hydroxy- and methyl-substitutions on the basic structure of these flavonoids. Flavonoid rich extract from rose hip (*Rosa canina*) inhibited superoxide anions, hypochlorous acid (HOCl) and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) generated by *in vitro* inflammatory conditions induced on isolated PMN (Daels-Rakotoarison *et al*, 2002). It has recently been suggested that phenolic/flavonoid antioxidants from apple extracts inhibited proliferation of tumor cells *in vitro* (Lapidot *et al*, 2002). Plant polyphenols, such as gallic acid, have been reported to have a range of biological activities including antimutagenic effects (Stupans *et al*, 2002).

Gallic acid is a naturally occurring plant phenol (found in green tea & grape seed extract). In screening anti-cancer agents, gallic acid was found to show cytotoxicity against all cancer cells that were examined. Additionally, the study found that gallic acid did not harm healthy cells, but was able to distinguish between normal cells and cancer cells (Inoue *et al*, 1995). A number of antioxidant phenols, pyridines, and gallic acid esters are believed to be effective by virtue of their antioxidant action. A direct relation between radical inhibitory action and radiation protection has been observed (Burlakova *et al*, 1965). The protective effect of gallic acid esters are attributed to inhibition of chain oxidation processes induced by radiation (Hasan *et al*, 1981). Activity-guided fractionation of the ethyl acetate soluble fraction from *Chrysophyllum cainito* L. (Sapotaceae), known commonly as star apple or caimito, was performed to identify the antioxidant constituents, which contained gallic acid as one of nine polyphenolic antioxidants (Luo *et al*, 2002). Bisignano *et al*, (2000) reported the antibacterial activity of gallic acid isolated from *Mitracarpus scaber*, a species used in folk medicine by West African native people and the minimum inhibitory concentration of gallic acid was found as 3.90 µg /ml for the inhibition of the growth of *Staphylococcus aureus*. A water extract of *Limonium wrightii* showed a strong scavenging action for the 1, 1-diphenyl-2-picrylhydrazyl, or superoxide anion and moderate for

hydroxyl radical. Gallic acid was identified as the active component of *Limoniumwrightii* with a strong free radical scavenging action (Aniya *et al*, 2002). However, growth retardation and toxicity symptoms were assigned to gallic acid when fed to rats at dietary levels of 2-10% (Joslyn and Glick, 1969).

In our highly industrial and technological society, the pharmaceutical industry had been disrupting the ancient relationship between man and plants. However there is already a decided swing back to the old ways. People are beginning to take a greater interest in herbs and their uses, and grandmother's remedies are coming into their own again. Rediscovery of old truths and integration of the traditional medical system with new technology can generate wonderful drugs without any side effects.

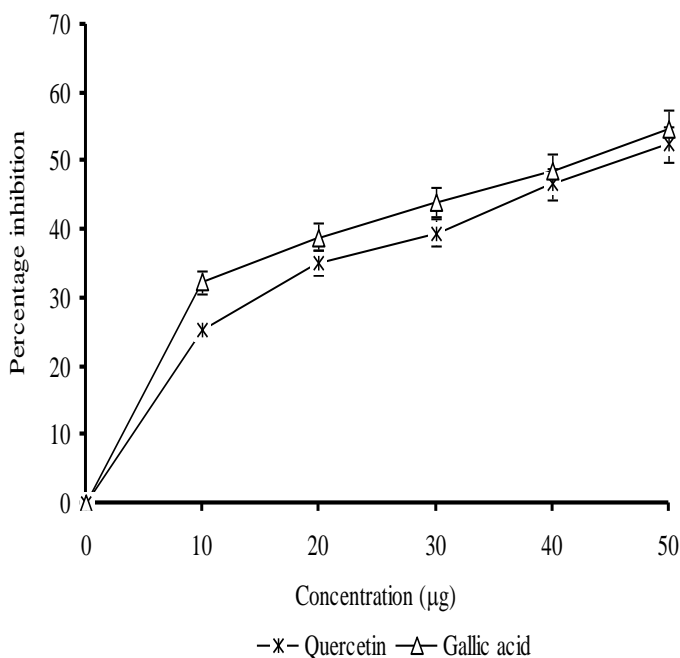


Fig 1. Effect of gallic acid on FeSO<sub>4</sub> induced lipid peroxidation



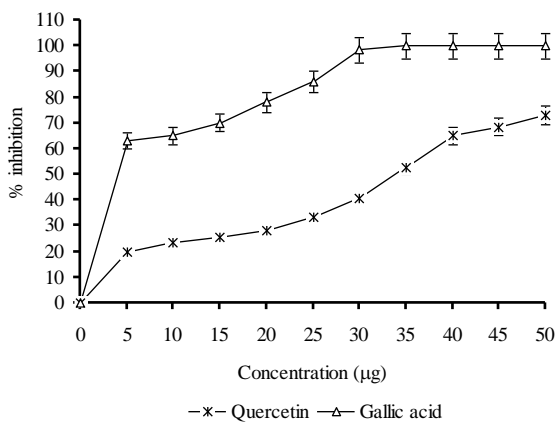


Fig 2. Percentage inhibition of superoxide production.  
Values expressed as mean  $\pm$  SEM, for n = 6.

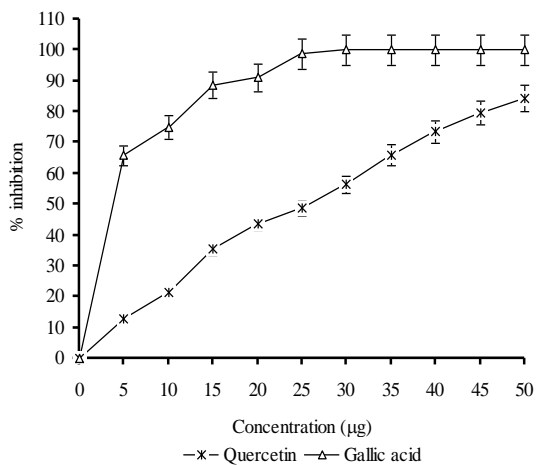


Fig 3. Antiradical efficiency

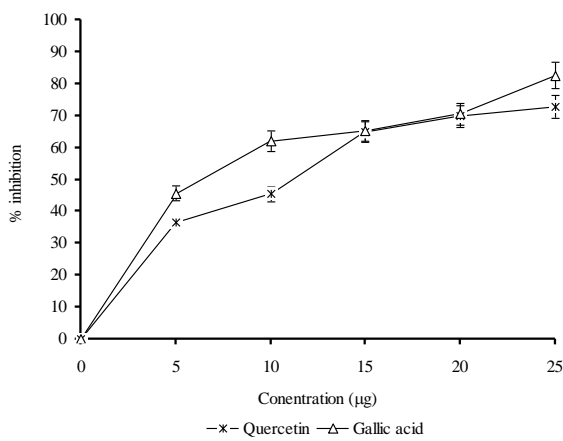


Fig 4. Effect of gallic acid on hydroxyl radical scavenging

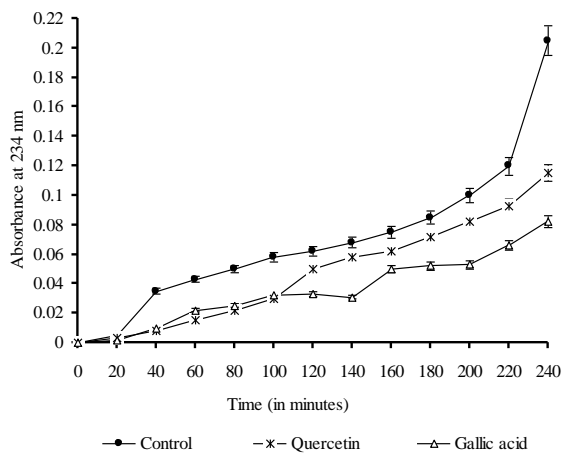


Fig 5. Effect of gallic acid on serum oxidation

Sample	Lag time (in minutes)
Control	17
Quercetin (50 µg)	71
Gallic acid (50 µg)	108

Table 1. Effect of gallic acid on lag time for lipoprotein diene formation

## References

- Catapano, A.L., 1997. "Antioxidant effect of flavonoids". *Angiology* 48, 39- 44.
- Rice-Evans, C.A., Miller, N.J., Paganga, G., 1997. "Antioxidant properties of phenolic compounds". *Trends Plant Sci.* 2, 152-159.
- Robak, J., Gryglewski, R.J., 1996. "Bioactivity of flavonoids". *Pol. J. Pharmacol.* 48, 554- 564.

---

## Classroom Management

M.SAVITHA

*Asst. Prof in History, N.M.S.S.V.N College of Education, Nagamalai, Madurai.*

Classroom management is aim to achieve desired goals for teaching and learning in the classroom. In is more dependent on the progress and outcomes of the various activities of the class, which lead the group of pupils to develop excellence in their performance. Today, we know more about teaching than we ever have before. Research has shown us that teachers' actions in their classrooms have twice the impact on student achievement as do school policies regarding curriculum, assessment, staff collegiality, and community involvement. We also know that one of the classroom teacher's most important jobs is managing the classroom effectively. Classroom management is closely linked to issues of motivation, discipline and respect. Methodologies remain a matter of passionate debate amongst teachers; approaches vary depending on the beliefs a teacher holds regarding educational psychology. A large part of traditional classroom management involves behavior modification, although many teachers see using behavioral approaches alone as overly simplistic.

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

## Introduction

Classroom management is the process by which teachers and schools create and maintain appropriate behavior of students in classroom settings. The purpose of implementing classroom management strategies is to enhance prosocially behavior and increase student academic engagement. Effective classroom management principles work across almost all subject areas and grade levels. When using a tiered model in which school-wide support is provided at the universal level, classroom behavior management programs have shown to be effective for 80-85 percent of all students. More intensive programs may be needed for some students.

Classroom management is a term used by teachers to describe the process of ensuring that classroom lessons run smoothly despite disruptive behavior by students. The term also implies the prevention of disruptive behavior. It is possibly the most difficult aspect of teaching for many teachers; indeed, experiencing problems in this area causes some to leave teaching altogether.

## The Approaches of Class Room Management

### Culturally Responsive Classroom Management

Culturally Responsive Classroom Management is an approach to running classrooms with all children, in a culturally responsive way. More than a set of strategies or practices, CRCM is a pedagogical approach that guides the management decisions that teachers make. It is a natural extension of culturally responsive teaching which uses students' backgrounds, rendering of social experiences, prior knowledge, and learning styles in daily lessons. Teachers, as culturally responsive classroom managers, recognize their biases and values and reflect on how these influence their expectations for behaviour and their interactions with students as well as what learning looks like.

## The Good Behaviour Game

The Good Behaviour Game can be used to increase desired behaviours (e.g., question asking) or to decrease undesired behaviours (e.g., out of seat behaviour). The GBG has been used with pre-schoolers as well as adolescents; however, most applications have been used with typically developing students (i.e., those without developmental disabilities). In addition, the Game "is usually popular with and acceptable to students and teachers.

## Don't leave relationships to chance

Teacher-student relationships provide an essential foundation for effective classroom management—and classroom management is a key to high student achievement. Teacher-student relationships should not be left to chance or dictated by the personalities of those involved. Instead, by using strategies supported by research, teachers can influence the dynamics of their classrooms and build strong teacher-student relationships that will support student learning.

## Discipline with Dignity

Discipline with Dignity provides an in-depth flexible approach for effective school and classroom management. With a strong focus on developing responsibility, it is a comprehensive, practical program that leads to improved student behavior through establishing the shared values of a classroom/school then developing a clear set of expectations, and teaching responsible thinking, cooperation, mutual respect, and shared decision-making.

## Discipline without Stress, Punishments or Rewards

The approach is designed to educate young people about the value of internal motivation. The intention is to prompt and develop within

youth a desire to become responsible and self-disciplined and to put forth effort to learn. The most significant characteristics of DWS are that it is totally non-coercive and takes the opposite approach to Skinnerian behaviourism that relies on external sources for reinforcement.

## Use Equitable and Positive Classroom Behaviors

Teachers should, for example,

- Make eye contact with each student. Teachers can make eye contact by scanning the entire room as they speak and by freely moving about all sections of the room.
- Deliberately move toward and stand close to each student during the class period. Make sure that the seating arrangement allows the teacher and students clear and easy ways to move around the room.
- Attribute the ownership of ideas to the students who initiated them. For instance, in a discussion a teacher might say, “Cecilia just added to Aida's idea by saying that . . .”
- Allow and encourage all students to participate in class discussions and interactions. Make sure to call on students who do not commonly participate, not just those who respond most frequently.
- Provide appropriate wait time for all students to respond to questions, regardless of their past performance or your perception of their abilities.

## Take a Personal Interest in Students

Probably the most obvious way to communicate appropriate levels of cooperation is to take a personal interest in each student in the class. Although busy teachers—particularly those at the secondary level—do not have the time for extensive interaction with all students, some teacher actions can communicate personal interest and concern without taking up much time. Teachers can

- Talk informally with students before, during, and after class about their interests.

- Greet students outside of school—for instance, at extracurricular events or at the store.
- Single out a few students each day in the lunchroom and talk with them.
- Be aware of and comment on important events in students' lives, such as participation in sports, drama, or other extracurricular activities.
- Compliment students on important achievements in and outside of school.
- Meet students at the door as they come into class; greet each one by name.

## Classroom management as a process

### Teachers must

- Develop caring, supportive relationships with and among students;
- Organize and implement instruction in ways that optimize students' access to learning;
- Use group management methods that encourage students' engagement in academic tasks;
- Promote the development of students' social skills and self-regulation; and
- Use appropriate interventions to assist students with behavior problems.

Many of them describes classroom management as a process consisting of key tasks that teachers must attend to in order to develop an environment conducive to learning. These tasks include: organizing the physical environment, establishing rules and routines, developing caring relationships, implementing engaging instruction and preventing and responding to discipline problems.

## The Teacher and the Classroom Management

This implies the creation of an environment in the class as it allows for the best display of the student's abilities in the teaching- learning process. There is the maximum involvement of the students in the classroom activities. The teacher and the students are full of



enthusiasm. The classroom environment based on the mutual goodwill and faith. The teacher gives due regard to the individuality of the students and the students in turn show spontaneous respect for their teacher. Pupils with widely different backgrounds different abilities and interests attend school today. Broadly speaking an effective classroom management include:

- Curriculum Development and implementation
- Adjustment to individual differences and development
- Dynamic techniques of instruction
- Use of technology of teaching
- Maintaining class Discipline
- Evaluating and discussing pupils performance

Some characteristics of having good teacher-student relationships in the classroom involve the appropriate levels of dominance, cooperation, and awareness of high-needs students. Dominance is defined as the teacher's ability to give clear purpose and guidance concerning student behavior and their academics.

By creating and giving clear expectations and consequences for student behavior, this builds effective relationships. Such expectations may cover classroom etiquette and behavior, group work, seating arrangements, the use of equipment and materials, and also classroom disruptions. Assertive teacher behavior also reassures that thoughts and messages are being passed on to the student in an effective way. Assertive behavior can be achieved by using erect posture, appropriate tone of voice depending on the current situation, and taking care not to ignore inappropriate behavior by taking action.

## Conclusion

Finally, "ignoring and approving" is an effective classroom management strategy. This involves ignoring students when they behave undesirably and approving their behavior when it is desirable. When students are praised for their good behavior but ignored for their bad behavior, this may increase the frequency of good behavior and decrease bad behavior. Student behavior may be maintained by attention; if students have a history of getting

attention after misbehavior, they may continue this behavior as long as it continues to get attention.

Effective teacher-student relationships have nothing to do with the teacher's personality or even with whether the students view the teacher as a friend. The most effective teacher-student relationships are characterized by specific teacher behaviors are exhibiting appropriate levels of dominance and exhibiting appropriate levels of cooperation. Effective classroom management involves clear communication of behavioral and academic expectations as well as a cooperative learning environment.

## References

- Digumaruti Bhaskara Rao., & Sheik Abdul Khadar., "School education in India." *Discovery publishing house.*, New Delhi., 2004
- Dr. Sachdeva. M.S., "A new approach to school management"., *Bharat Book Centre.*, Ludhiana.,2004.
- Dr. Arulsamy.s., "Educational Innovations and management.", *Neelkamal publications pvt.Ltd.*, New Delhi., 2010.

---

## Strategies for Effective Classroom Management

T. LOUDI GRACY ARULMANI

*Asst. Prof. of Commerce NMSSVN College of Education, Nagamalai, Madurai*

A good teacher must be good at classroom management the teacher should guide the students towards self-direction. Rhythm in the classroom is also important. Class culture makes the students feel secure. The teacher's smile, words of encouragement, praise and good attention affect students' behavior Soft reprimand is very effective. Self-learning and self-evaluation are useful for students. Kounin, one of the early writers on classroom management, identified several effective classroom management techniques. He emphasized cultivating withitness, coping with overlapping activities, maintaining the momentum of a lesson, keeping the whole class involved in a lesson, using a variety of instructional techniques enthusiastically, being aware that the ripple effect can be used to a teacher's advantage by focusing on the misbehavior of students rather than on their personalities, and suggesting alternative constructive behaviors. Further, needs of the students in the classroom, general techniques of classroom management are suggested for a classroom teacher at the end of this article.

**Key words:** Classroom management, Rhythm, withitness, reprimand, ripple effect, class culture, techniques

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

## Introduction

A classroom is not merely a room where students attend classes or move from one room to another in order to attend classes as per the timetable. It can be considered as a sacred place of learning where a teacher teaches and students learn. In other words, a classroom is a teaching-learning interactive place where two personalities namely the teacher and the taught interact every day. A child is like a plant. A child's mind is more sensitive to treatment. Since the child's mind is a great source of potential, natural but controlled conditions can nurture magnificent growth. It all depends upon how the parents at home and teachers in the classroom manage the development of the potentialities of children. "Education must foster in students the essential leap from *I know* to *I care*. Therefore, the classroom must be the place where the student can explore himself. The teacher must regard the child as an active, thinking, feeling human being, who needs to be stimulated, directed and guided towards the realization of all his inherent potentialities thereby becoming a worthy member of a society.

## Classroom Management

Classroom management is one of the two main functions of a teacher, the other being teaching and instruction. This approach is based on the human organization of modern theory of relationship centered. The basic assumption of this approach is that a teacher has the ability to take decisions and solve classroom problems. Though a difficult job, a teacher has to direct and control the classroom activities. The main focus of classroom management is to generate an atmosphere that is conducive for learning. In fact, the quality of teaching and learning depends upon the quality of classroom management. Classroom management is a very dynamic process and at the same time it is the most difficult job of a teacher.

Areas for which concern to be shown by the teacher in the classroom

1. Conduct Problems- This included such responses as aggressive behavior, disruptive behavior, lacks self-control, uncooperative,

foul mouthed, that is those responses referring to behaviors which reflect an outward going, acting out attitude.

2. Neurotic Problems- This included responses such as withdrawn, insecure and miserable and timid, that is, behaviors which reflect an inward looking, passive attitude.
3. Mixed conduct- This included those responses which embodied elements of both the conduct and neurotic problem categories. It was included because other researchers have concluded that a substantial percentage of behavior disordered pupils show elements of both behavioral patterns, and a School Council Project, found that teachers in special classes and units for disturbed pupils rated 25 per cent of their pupils to be in this group.
4. Non-attendance- This included those responses referring to any aspect of non-attendance and also included two responses which referred to extremely bad timekeeping.
5. Delinquent Behavior- This includes all of those responses which at an appropriate age, could constitute a criminal act, this is to say that children below the age of criminal responsibility could be, and were, included.
6. Learning Problems- This included responses such as poor attainment in basic subjects, low ability, poor concentration, lazy and so on.
7. Home Problems- This included responses referring to poor home situations, parental neglect, parental instability, parental imprisonment, absence, etc.
8. Physical Problems- This included those responses referring to a directly physical problem and also to those in which a physical problem and also to those in which a physical problem might be inferred.
9. Emotional Difficulties- This category was found necessary if the quality of certain responses was not to be lost. It included references to odd, strange or bizarre behavior. For example, lives in a fantasy world, high evil resource, maladjusted, has attempted suicide, unstable, no sense of right or wrong, never laughs.
10. Attention Seeking- This was included because a number of responses were expressed simply as attention seeking with no indication of how this was manifested.
11. Others- This took in all those responses which could not reasonably fit into the other categories, for examples victim of a sexual assault, unsettled, unpopular and general welfare.

## Needs, teaching structures and techniques of Motivation

The various needs, teaching structures and techniques of motivation to be used are summarized below:

Needs	Techniques of motivation
Lower Needs Physiological Safety Belonging	Reward and punishment Praise and Proof Success and failure
Higher needs Esteem Self-actualization	Competition and Cooperation Knowledge of result Self-motivation Novelty

In the daily classroom teaching, the teacher must be careful about monotony and boredom. He should always provide the students with activities. The teaching methods should capitalize on the students' needs for stimulation and their propensities to be curious and explore. The teacher should reward students' performance in such a way as to encourage further effect on the part of the learners. The disciplinary functions require the teacher to control undesirable behavior by the use of punishment but it should be rarely used. The teacher should use a combination of reward and punishment in controlling and regulation students' behavior.

## Strategies for classroom management

The teacher as management expert of the class adopts different strategies to manage it. In addition to authority and leadership, he has a repertoire of approaches which he applies depending on the behavior patterns exhibited by the students and the situation on hand. The teacher is successful in classroom management if he brings *rhythm* in everything he works with, develops a *class* culture to make the members of the class feel secure. The teacher's *attention* is one of the most basic of all influences on student's

behavior. The teacher's smile, words of encouragement, praise, evaluation and silence powerfully affect student behavior. *Teacher's verbal control* is the most common form of a teacher on a classroom. Verbal reprimand is quite understandable when teaching is viewed as giving direction and redirection.

The most effective classroom management techniques in Kounin, one of the early writer's perspective are as follows:

- The teacher must show his students that he is "with it". An expert at classroom management will nip trouble in the bud by commenting on potentially disruptive behavior before it gains momentum. Teachers who show they are "with it" head off discipline problems.
- The teacher should learn to cope with overlapping situations. Being able to handle overlapping activities helps to maintain classroom control.
- The teacher should be able to strive to maintain smoothness and momentum in class activities. When a teacher failed to take into account the degree of student's inattention and restlessness, commenting on an unrelated aspect of classroom functioning such as someone left a lunch bag while reading a lesson, wasting time dwelling on a trivial incident such as making a big fuss of a lost pencil, all these types of teacher behavior tended to interfere with the flow of learning activities.
- The teacher must try to keep the whole class involved, even when he is dealing with individual students. Some teachers, for example, call on students by going around a circle, or going up and down rows or following alphabetical order. Other call on a student then ask a question. All of these techniques tend to spotlight one child in predictable order. If a teacher does so, the other students become bored and may be tempted to engage in trouble-making activities.
- The teacher need to introduce variety and be enthusiastic, particularly with younger students. Students will be less inclined to sleep, daydream or engage in disruptive activities if they are exposed to an enthusiastic teacher who varies the pace and type of classroom activities.
- The teacher must be aware of the ripple effect When criticizing student behavior, be clear and firm, focus on behavior rather than on personalities, and try to avoid angry outbursts. If a teacher follows this suggestion, the amount of misbehavior may be reduced.

## Techniques of classroom management

In a well-managed classroom, students know what they are expected to do and do it successfully, are kept busy with teacher-assigned activities, and exhibit little confusion or disruptive behavior. Such classrooms are marked by a work-oriented yet relaxed and enjoy pleasant atmosphere. Classroom management can be made easier by using technology tools to carry out such tasks as test construction, record keeping, developing seating arrangements, analyzing space utilization, and monitoring student work. Some of the techniques of classroom management are as follows:

- The teacher must be confident and prepared for the first day of class
- The teacher must think ahead about how he plans to handle classroom routine, and explain basic procedures the first few minutes of the first day.
- The teacher is needed to establish class rules, call attention to them and explain why they are necessary.
- Instructional activity of the first day be clearly stated and be completed quickly and successfully by the efficient teacher.
- During the first few weeks with a new group of students, have them spend most of their time engaging in whole-class activities under teacher's direction.
- The teacher should give clear instructions, hold students accountable for carrying them out, and provide frequent feedback.
- The teacher need to demonstrate continually that he is competent, well prepared and in charge.
- The teacher must be professional best pleasant, and try to establish a business-like but supportive classroom atmosphere.

## Conclusion

The mastery of classroom management skills should not be regarded as an end in itself but these techniques are necessary tools. The mastery of techniques makes choices possible. The possession of classroom management skills allows the teacher to accomplish his teaching goals, whereas the absence of managerial skills acts as a barrier. It is needed for a teacher to develop managerial skills to understand the needs of the students in his classroom, identify the problems which his students face every day in the classroom and



how can it be rectified using the techniques. If the teacher ENJOYED teaching, students would ENJOY learning; If the teacher ENDURED teaching, students would ENDURE learning. What is enjoyed ENDURES. What is endured does not ENDURE. The ENJOYED teacher can make a good classroom

## Reference

- Classroom dynamics by V. Krishnamacharyulu – Neelamal publications pvt. Ltd
- Sharma R A *Managing Teaching Activities, Classroom management*, R Lall Book Depot, Meerut
- Global Education Series: 16 Classroom Administration by B M Sharma
- Authoritarian, permissive and Authoritative approaches to classroom management by Prof. H.M. Kasinath, Karnatak University, Karnataka, - *Article in Edutrack*
- Aggarwal J C Educational Administration, School Organization and Supervision, Arya Book Depot, New Delhi 2000.

---

## Attitudes and Skills in Learning

Dr. J. JEBASELVI

*Principal, R.M.P. C.S.I. P.S.K. Rajaratnam Memorial College of Education,  
Satankulam, Thoothukudi District, Tamil Nadu.*

Hard work in learning will not produce fast progress. Instead use of skills in learning will be effective in getting results. Positive attitude helps in learning process. Learning occupies a very important place in our life. The 21st century learning skills are often called the 4 C's: critical thinking, creative thinking, communicating, and collaborating. These skills help students learn, and so they are vital to success in school and beyond.

**Key words:** critical thinking, creative thinking, communicating, and collaborating.

### Introduction:

Hard work in learning will not produce fast progress. Instead use of skills in learning will be effective in getting results. Attitudes are evaluations people make about objects, ideas, events, or other people. Attitudes can be positive or negative. Explicit attitudes are conscious beliefs that can guide decisions and behavior. Implicit attitudes are unconscious beliefs that can still influence decisions and behavior. Positive attitude helps in learning process.

TeLeS, ISSN 2348-8409, Vol. 19, No 2. September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*

Learning occupies a very important place in our life. Most of what we do or not do is influenced by what we learn and how we learn it. Learning therefore provides a key to the structure of our personality and behavior. The 21st century learning skills are often called the 4 C's: critical thinking, creative thinking, communicating, and collaborating. These skills help students learn, and so they are vital to success in school and beyond.

## Critical thinking

Critical thinking is the process we use to reflect on assess and judge the assumption underlying our own and others ideas and efforts. It is focused, careful analysis of something to better understand it. It helps a person in stepping aside from his own personal beliefs, prejudices, and opinions to sort out the facts and discover the truth, even at the expense of his basic belief system. When people speak of "left brain" activity, they are usually referring to critical thinking. Here are some of the main critical-thinking abilities:

- Analyzing is breaking something down into its parts, examining each part, and noting how the parts fit together.
- Arguing is using a series of statements connected logically together, backed by evidence, to reach a conclusion.
- Classifying is identifying the types or groups of something, showing how each category is distinct from the others.
- Comparing and contrasting is pointing out the similarities and differences between two or more subjects.
- Defining is explaining the meaning of a term using denotation, connotation, example, etymology, synonyms, and antonyms.
- Describing is explaining the traits of something, such as size, shape, weight, color, use, origin, value, condition, location, and so on.
- Evaluating is deciding on the worth of something by comparing it against an accepted standard of value.
- Explaining is telling what something is or how it works so that others can understand it.

- Problem solving is analyzing the causes and effects of a problem and finding a way to stop the causes or the effects.
- Tracking cause and effect is determining why something is happening and what results from it.

## Creative Thinking

Creative thinking is the process we use to develop ideas that are unique, useful and worthy of further elaboration. It is expansive, open-ended invention and discovery of possibilities. When people speak of “right brain” activity, they most often mean creative thinking. Here are some of the more common creative thinking abilities:

- Brainstorming ideas involves asking a question and rapidly listing all answers, even those that are far-fetched, impractical, or impossible.
- Creating something requires forming it by combining materials, perhaps according to a plan or perhaps based on the impulse of the moment.
- Designing something means finding the conjunction between form and function and shaping materials for a specific purpose.
- Entertaining others involves telling stories, making jokes, singing songs, playing games, acting out parts, and making conversation.
- Imagining ideas involves reaching into the unknown and impossible, perhaps idly or with great focus, as Einstein did with his thought experiments.
- Improvising a solution involves using something in a novel way to solve a problem.
- Innovating is creating something that hasn’t existed before, whether an object, a procedure, or an idea.
- Overturning something means flipping it to get a new perspective, perhaps by redefining given, reversing cause and effect, or looking at something in a brand-new way.

- Problem solving requires using many of the creative abilities listed here to figure out possible solutions and putting one or more of them into action.
- Questioning actively reaches into what is unknown to make it known, seeking information or a new way to do something.

## Communicating

Communication (from Latin communicate, meaning "to share") is the purposeful activity of information exchange between two or more participants in order to convey or receive the intended meanings through a shared system of signs and semiotic rules. The basic steps of communication are the forming of communicative intent, message composition, message encoding, transmission of signal, reception of signal, message decoding and finally interpretation of the message by the recipient.

- Analysing the situation means thinking about the subject, purpose, sender, receiver, medium, and context of a message.
- Choosing a medium involves deciding the most appropriate way to deliver a message, ranging from a face-to-face chat to a 400-page report.
- Evaluating messages means deciding whether they are correct, complete, reliable, authoritative, and up-to-date.
- Following conventions means communicating using the expected norms for the medium chosen.
- Listening actively requires carefully paying attention, taking notes, asking questions, and otherwise engaging in the ideas being communicated.
- Reading is decoding written words and images in order to understand what their originator is trying to communicate.
- Speaking involves using spoken words, tone of voice, body language, gestures, facial expressions, and visual aids in order to convey ideas.

- Turn taking means effectively switching from receiving ideas to providing ideas, back and forth between those in the communication situation.
- Using technology requires understanding the abilities and limitations of any technological communication, from phone calls to e-mails to instant messages.
- Writing involves encoding messages into words, sentences, and paragraphs for the purpose of communicating to a person who is removed by distance, time, or both.

## Collaborating

Collaborative learning is a method of teaching and learning in which student's team together to explore a significant question or create a meaningful project. A group of students discussing a lecture or students from different schools working together over the Internet on a shared assignment are both examples of collaborative learning.

- Allocating resources and responsibilities ensures that all members of a team can work optimally.
- Brainstorming ideas in a group involves rapidly suggesting and writing down ideas without pausing to critique them.
- Decision-making requires sorting through the many options provided to the group and arriving at a single option to move forward.
- Delegating means assigning duties to members of the group and expecting them to fulfil their parts of the task.
- Evaluating the products, processes, and members of the group provides a clear sense of what is working well and what improvements could be made.
- Goal setting requires the group to analyse the situation, decide what outcome is desired, and clearly state an achievable objective.
- Leading a group means creating an environment in which all members can contribute according to their abilities.

- Managing time involves matching up a list of tasks to a schedule and tracking the progress toward goals.
- Resolving conflicts occurs from using one of the following strategies: asserting, cooperating, compromising, competing, or deferring.
- Team building means cooperatively working overtime to achieve a common goal.

### Conclusion:

Positive attitude and skills in learning bring good results among learners. Critical thinking, creative thinking, communicating, and collaborating are important skills in learning.

### References:

Mangal, S.K., *Advanced Educational Psychology*, 2<sup>nd</sup> ed., New Delhi: Prentice Hall of India, 2006.  
<http://www.thirteen.org/edonline/concept2class/coopcollab/>  
<http://umich.edu/~elements/probsolv/strategy/crit-n-creat.htm>

---

## Open book test: A tool to analyze diverse learners in a class room

VINOLIYA

*Asst. Professor, Dept. of Zoology, Holy Cross College, Nagercoil.*

MARY METTILDA.S

*Asst. Professor, Dept. of Zoology, Holy Cross College, Nagercoil.*

This paper aims to analyze open book examinations as a tool to understand the learning behavior, attitude and motivation level of students in achieving academic integrity. Open book test was conducted in different levels to bring maximum score and the results indicated a better performance with each trial but complete success was not obtained. This indicates lack of motivation among students and the attitude of hard work diminishing among the student community. Comparison of open book test with traditional test showed better results because it required less memorization and left more room for logical thinking. Implementation of open book test in colleges can change students' learning attitudes and make the learning process more active.

**Key words:** Open book test, Traditional test, Learning attitude, Motivation

TeLeS, ISSN 2348-8409, Vol. 19, No 2, September 2019

*A publication of Muslim College of Education,  
No. 1 New Street, Thiruvithancode,  
Kanyakumari District, Tamil Nadu, INDIA.*



## Introduction

Teaching is a profession where the faculties are given a group of learners and it becomes necessary to know the skills and potentials within them. Each learner develops the fundamental cognitive skills like memory, attention, processing and sequencing which when developed together improves learning and reading. An overachiever learner has the ability to memorize and get good grades. A sound learner is motivated to go an extra mile and get solid grades where as an unmotivated learner feels uninterested and unchallenged by the learning process. Concerns over the role of faculty in effective communication with students, motivation and assuring learning outcomes are growing (Yang and Cornelius, 2005). A variety of performance assessments including examinations are employed to assure quality in education. According to Olt (2002), one way to ensure academic integrity is through the use of open book test. Open book testing promotes realistic learning opportunities that emphasize higher order thinking skills. Feller (1994) believed that closed book exam test only what student can memorize while open book have the potential to measure higher level thinking skills. He believed that open book exam was one method of incorporating realistic, open ended task into higher education. Research findings demonstrate that students perform better on open book test than traditional testing (Liu, 2005). Francis (1982) investigated open book test in a University English literature course observed that students who took open book test earned higher scores than peers who took traditional test. Pauker (1974) found that over all scores were not different between two groups, but the below average student scores were lower on open book exam. Thus, open book test helps us to understand the reading and logical reasoning of a student, their motivation to achieve higher and the role of the faculty in making the classroom environment stimulating and interactive. Hence the present study aims to analyze the student performance, based on open book test and further to understand the cognitive skills and level of motivation to reach academic success.

## Methodology

The study compares the effect of open book testing with that of traditional test on student learning based on their performance in multiple choice questions. The students assessed were enrolled in

the II UG program of Zoology course and were handled by two instructors for the subject they took the test. The participants completed the test within the stipulated time limit. The first open book test was conducted using a power point where the student was expected to answer the MCQ of 50 questions where each question was given a time limit. Based on their performance the students were asked to prepare on the same questions and once again assessed using a printed question paper. A score of 100 % was expected, so the students were provided opportunity to take the test four times to achieve the required score. The results obtained were compared with the traditional testing like written quiz test and online quiz.

## Results

The data obtained was analyzed and the results reveal that in trial one of open book testing the score was maximum between 0 -10 marks with 75% students falling in this range. In trial 2, 3 and 4 after thorough preparation the students scored between 10 to 20 marks but 25 out of 38 students were not able to achieve 100% even in the 4<sup>th</sup> trial. In traditional test and online test the range of marks scored was higher between 5 and 15 marks (Table-1).

Table: 1

Performance of students in a MCQ test assessed through open book and traditional test

Marks	Success rate of students (%)					
	Open book test				Online test	Traditional test
	Trial 1	Trial 2	Trial 3	Trial 4		
0-5	51	0	0	0	11	13
5-10	29	3	0	0	58	39
10-15	15	37	26	23	28	37
15-20	5	60	74	77	3	11

## Discussion

An open book examination is one in which the students are allowed to use their book or reference material for answering their questions. In the current scenario teaching is just thought as dissemination of knowledge and teacher's role is viewed as facilitating the transfer of information from text book to student's mind (Mohan, 1997). Most conventional examinations test the memorizing ability of the student and to cope with this demand the students memorize the test books and transfer it to answer books. In this type of examination, success depends on the quantity of information and the efficiency with which it is reproduced. In the present study as most of the students were from rural background with poor efficiency in understanding the subject in English and were not capable of memorizing the concepts and reproducing, the traditional testing showed poor results when compared to open book testing of trial 2,3 and 4. On the other hand the open book test results were very poor in the first trial and this shows traditional testing to be better. Repeated preparation of students to achieve better score and helping them to understand the mechanism behind open book test helped them to achieve better in further tests. The reason behind the low achievement could be attributed to the lack of understanding between the two tests, motivation to achieve higher score and the organizational and logical reasoning of the student. One key factor behind low success rate is lack of motivation. Motivation is of two types –intrinsic motivation which arises from a desire to learn a topic due to inherent interest, self-fulfilment and to achieve a mastery over the subject while extrinsic motivation performs for the sake of accomplishing a specific outcome. When students take up a test for the sake of just passing out they are least motivated and the learning outcome is not achieved. Studies have demonstrated that a lack of preparation for open book test exists on the part of some students (Brightwell *et al.*, 2004). It is related to the fact that anxiety is reduced when taking open book test and students believe no preparation is required to perform well (Theophilides and Dionysius, 1996). Open book examination, if properly implemented, promotes the ability to think rather than to memorize, reduce stress for the examinees and encourage students to self-monitor their own learning (Theophilides *et al.*, 1996). Together with appropriate changes to teaching methods, it could well be the most effective way to improve our education system and make it one for the 21st century (Feller, 1994).

## References

- Brightwell, R., Daniel, J., & Stewart, A. (2004). "Evaluation: Is an open book examination easier?" *Bioscience Education E-Journal*, 3.
- Feller, Morris. (1994). "Open-book testing and education for the future" *Studies in Educational Evaluation* 20, 235 – 238.
- Francis, J. C. (1982). "A case for open-book examinations" *Educational Review*, 34(1), 13-26.
- Mohanani, K. P. (1997). "Open Book Examination." *A report and a response to some recurrent concerns, Seminar on conducting open book examinations organized by Centre for Development of Teaching and Learning at National University of Singapore*, January, 1997. Ioannidou.
- Olt, M. (2002). "Ethics and distance education: Strategies for minimizing academic dishonesty in online assessment" *Online Journal of Distance Learning Administration*, 5(3).
- Pauker, J. D. (1974). "Effect of open book examinations on test performance in an undergraduate child psychology course". *Teaching of Psychology*, 1(2), 71-73. Liu, Y. (2005). Effects of online instruction vs. traditional instruction on students' learning. *International Journal of Instructional Technology and Distance Learning*, 2(3)
- Theophilides, Christos and Dionysiou, Omiros. (1996). "The major functions of the open-book examination at the university level" *A factor analytic study. Studies in Educational Evaluation* 22(2), 157 – 170