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Contents

Articles   Page

Editor's Note

Dear Readers,

You are viewing the fourth and final issue of **Vetri Education**, Vol. VIII (2013) with improvement in style and appearance. The title and name(s) of authors of articles of Volumes I-VII are given in the contents, after the articles. As usual the issues will be available by the middle of the first month in the quarter at: **www.vetrieducation.com** Authors and subscribers can receive a PDF file of the Journal by e-mail, on request with e-mail address. The Vetri Group looks forward to the continued support and encouragement in future too.

The first article in this issue: *Effective E-Learning* is an invited article from **Er. Ganesh Gunasegaran,** an expert and practitioner of on-line classes, *E-learning*, etc., and is the Founder and Chief organiser of **akshi.com**, providing on-line classes through **http://akshi.com** Effective *E-learning* provides a short comprehensive account of different aspects of effective Net based education.

G. C. Bhattacharya presents, in the second article: *Relationship between Attitude and Aptitude for Teaching*, the result of a study on a limited sample of teacher-pupils, drawing the conclusion of the higher level for the two qualities, existence of their relationship and higher level in men than women.

In the third article: *Employability of Fashion and Garment Making Students from Youth Polytechnics of Kenya*, **Peninah Wakiuru Kamaul, Joseph Mworia Wamutitu** and **Gladwell Mbugua** examine the views of the employers on the lapses and gaps in occupational skills of the trainees and suggest remedial measures to improve their employability.

The fourth article: *Current Issues in the School Curriculum and the sixth article: Role of Supervisor in Learning and Achievement* are from the same authors – **Marlow Ediger** and **Digumarti Bhaskara Rao** - who discuss ways and means of overcoming the deficiencies and improving and updating the curriculum in the fourth, and explain the desirable approach for the supervisor to follow to enhance the achievement and progress of the students, in the sixth article.

K. Thiyagu in the article: **Teacher-Educators' Perception towards Pedagogical Benefits of Wiki,** fifth in this issue, examines the level and nature of perception of a sample of teacher-educators by the survey method and concludes that they have average level of perception which is not influenced by the difference in gender, age, period of experience and educational level.

Vetri Education expresses sincere appreciation and thanks for the valuable contributions and encouragement from authors, subscribers and all our well wishers, and for the earnest services of Mr. P. R. Anebarassane Rada and Mr. N. R. Prabu for their inputs for the successful and timely publication of the issues of the Journal.

Academic Editor,
Vetri Education

Effective E-learning[#]

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Abstract

Information through technological and net based gadgets will replace text books as the major source of learning soon. Also, even great Universities of the world are slowly switching over to distance education mode, with the industry growing at an unprecedented rate, facilitating virtual class rooms employing E-learning and gadgets like smart boards, robot teachers etc. A preliminary idea of E-learning and certain tips for preparation of E-lessons are briefly presented.

Key words: E-learning, on-line classes, effectiveness, evolution

Introduction

Distance education has assumed more importance than conventional one, especially from the learners' point of view, during the last 10 years, for a variety of reasons. Limit or restriction of time, space, teachers / institutions, innovative pedagogy, financial and physical debility on the part of the learners - all contributed to development and convenient employment of seven pedagogical devices – android tablets, sixth sense, kinect, touch screen black board, iPod, robots and educational video games - (resembling the famous seven colours, seven wonders, seven ragas etc.) enhancing scope and utility of self education through E-learning. A user employing one or more of them, following an E-lecture or engaging in a web 2.0 tool – blogs, wikis, podcasting, social net working, micro-blogging, RSS, discussion forums, chat room forums, e-portfolios, concept maps, social book marking, web syndication, tag clouds, instant messaging etc. – is often ignorant of the enormous efforts, put in for making the device near perfect in functioning and improving it further continuously. A short account of E-learning, along with a few tips and information needed for preparing an e lesson for E-learning and instructional strategies forms the subject of the article.

Discussion

E-learning refers to the process of; delivering educational instructions through internet; allowing interaction between students, teachers and other students; allowing students to acquire personal knowledge without the constraint of time and location.

Benefits of E-learning

E-learning promises the following benefits

- Students can learn irrespective of his/her location or the location of the teacher

- Asynchronous learning allows students to learn at any time

- Synchronous learning allows students to interact with the teacher and other students in real-time

#Invited lecture from Er. Ganesh Gunasegaran founder-organizer of akshi.com and practitioner of E-learning. Website: http://akshi.com *E-mail: gg@akshi.com

- Students can have access to up-to-date course materials at all times
- E-learning offers flexibility for part-time students, they can learn whenever they get a break from their main job
- Teachers can deliver classes from anywhere, anytime
- Teachers can push up-to-date course materials to students anytime
- Teachers can determine the needs and the expertise of individual student and provide customized instruction

Learning theories

To enable effective E-learning, proper instructional strategies should be used to create the course materials. The following are few of the common learning theories:

- *Behaviorist theory:* learn facts
- *Cognitivist theory:* learn principle and processes
- *Constructivist theory:* learn real-life and personal applications

An ideal E-learning course should blend these learning theories whereever applicable, to provide a streamlined learning experience.

The implications of the learning theories for E-learning is discussed below.

Behaviorist theory

Behaviorist theory considers the student's mind as a black box, and quantitatively observes the response to a stimulus. It ignores the thought process that went through the mind to arrive at the response.

This theory can be used to teach facts.

E-learning applicability

Provides learning outcomes before the start of the course (Figure -1); e.g. students should be tested to determine whether the learning objectives are met (Figure-2), learning materials should properly be sequenced (from simple to complex) and student's progress should be monitored with feedback (Figure -3)

Figure -1

Learning outcomes

After finishing this course, you should be able to

- Understand and explain the classification of matters by its state
- Understand and explain the classification of matters by its composition
- Understand and explain the different methods of separating mixtures

Figure -2

1. Separation of several liquids with similar boiling points can be achieved using

    ○ Filtration

    ◉ Distillation

    ○ Fractional distillation

    ○ Sedimentation

Figure -3

1. Separation of several liquids with similar boiling points can be achieved using

Your answer: Distillation

Correct answer: Fractional distillation

Cognitivist theory

Cognitivist theory considers the student's learning as an internal process involving Memory, Thinking, Reflection, Abstraction, Motivation and Metacognition.

It states that external instructions are received through the student's senses. Then it is stored in the sensory store for less than a second. The information is then transferred to the working memory for processing for 20 seconds followed by its transmission to the long-term memory for permanent storage (Figure - 4)

Figure -4

The amount of information transfered to the sensory store is dependent on the number of student's senses activated during learning (Ex: Visual, Audio).

The amount of information transfered to the working memory is dependent on the amount of student's attention paid during learning.
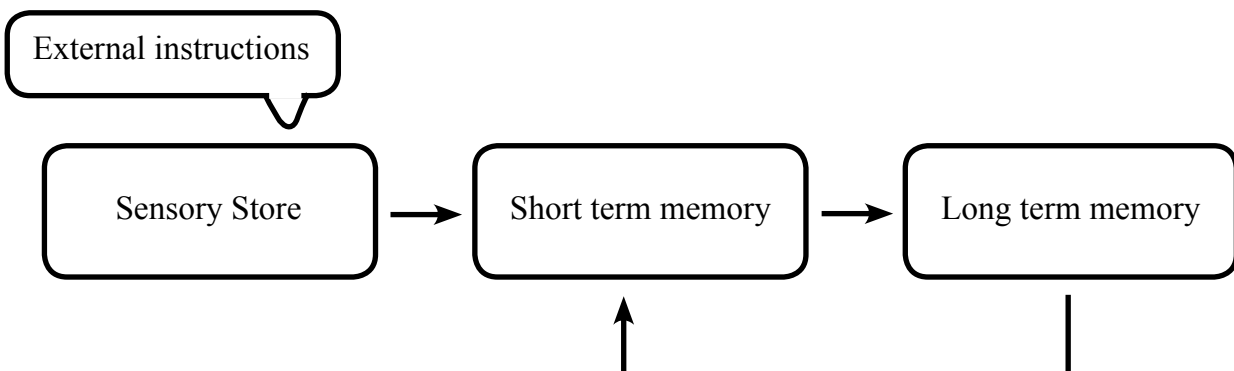
The amount of information transferred to the long-term memory is dependent on the quality and the depth of processing taking place in the working area. The information stored in the long term memory is either Assimilation - information is changed to fit into existing knowledge or Accommodation - existing knowledge is changed to accommodate the new information.

Course materials should be designed in order to increase the amount of information stored in each of the above storage areas. This theory can be used to teach principle and processes.

E-learning applicability

Strategies to increase sensory storage includes use of multiple modes of delivery viz., audio, visual, animation and video, and caring not to overload the student's senses with non-essential sensations (Figure-5).

Figure -5

Filtration

Filtration is commonly the mechanical or physical operation which is used for the separation of solids from fluids (liquids or gases) by interposing a medium through which only the fluid can pass

Feed

Filtrate

Play animation
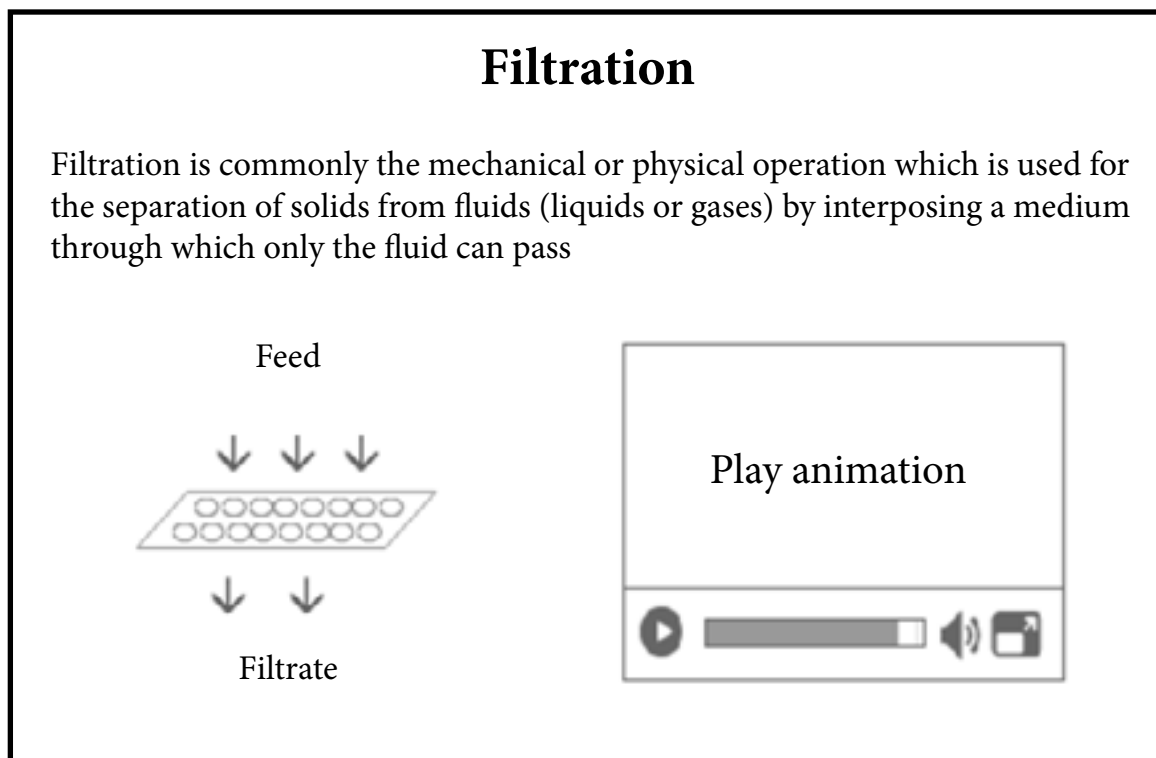
Examples of strategies to increase working memory storage are: Important information should be placed in the centre. Critical information should be highlighted. Students should be told of the importance o the lesson. The difficulty of the material should match the knowledge level of the student.

Strategies to increase long-term memory storage are based on those to retrieve existing knowledge, use of advance organizers, provision of conceptual models (e. g. planets orbiting the sun to explain electrons orbiting the nucleus of an atom), providing pre-instructional questions to set expectations and use of pre-requisite test questions to activate pre-requisite knowledge.

Strategies to aid effective processing in the working memory constitute: Restricting the information to 5–9 key items per screen, Use of information map to provide an overview of the lesson and other maps - Linear information, Spider-shaped information and Hierarchical information maps, Inclusion of activities for students with different learning styles, Concrete-experience (students prefer specific examples and working with peers), Reflective-experience (students prefer to have all the information and tend not to interact with others), Abstract-conceptualization (students prefer to work with things and symbols and tend not to interact with others) and Active-experimentation (students prefer to learn by doing practical projects and participating in group discussion).

Motivation of the students to learn can be enhanced by: Attention (Capturing the students attention by including an activity at the start of the session), Relevance (Convey the importance and benefits of the lesson), Confidence (Explain the outcome of the lesson, sequencing from simple to complex), Satisfaction (Provide feedback and encourage the student to apply the knowledge in real-life scenario), Allowing the students to use their metacognitive skills, Providing self-check questions and Explanation with real situation and real-life simulation.

Constructivist theory

Constructivist theory considers the students to be playing an active role constructing knowledge and the teacher acts as an advisor. Constructivist theory can be used to teach real-life and personal application.

E-learning applicability

Ask the student to apply the knowledge in practical situations. Allow the student to take the initiative to learn and to interact with other students and the teacher. Encourage collaborative and co-operative learning by assigning group works. Allow the student to decide on the learning goals, with the teacher's help. Allow the student to reflect on the content by using embedded questions. Use assignments to make the students relate to the learning materials. Support student interaction and student-interface interaction (e. g. web and mobile interface). Student-content interaction (e. g. video player, presentation player). Student-support interaction (e.g. support email, support chat). Student-student interaction (e. g. live chat, discussion forums). Student-teacher interaction (live chat, discussion forums, e-mails). Student-expert interaction (live chat, discussion forums, e-mails). Student-context interaction (e.g. simulations; Figure-6)

Figure -6
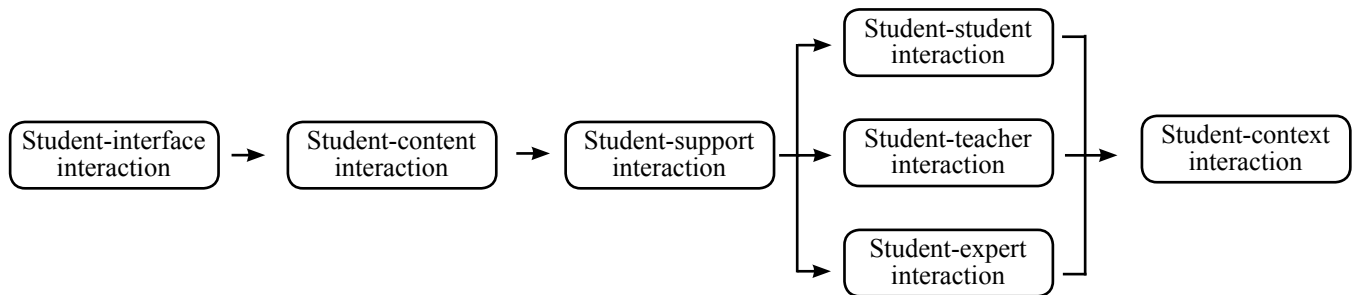
Conclusion

E-learning is not just making the course materials available on the internet. For E-learning to be effective proper learning strategies and theories should be considered while developing the course materials and allowing user collaboration.

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CURIOUS FACTS, MATERIALS, PROCESSES AND BIO ACTIVITIES
Light boost for catalysts (New Process Improves Catalytic Rate of Enzymes by 3,000 %)

Shedding light on enzymes can boost activity by up to thirty times, according to a study from Pratul Agarwal's team at Oak Ridge National Laboratory. The team introduced a light-activated molecular switch across two regions of the enzyme Candida antarctica lipase B, or CALB. This enzyme catalyzes the break down of lipids. "Using this approach, our preliminary work with CALB suggested that such a technique of introducing a compound that undergoes a light-inducible conformational change onto the surface of the protein could be used to manipulate enzyme reaction", Agarwal explains. This and related enzymes are widely used in industrial biotransformation to make biofuels and other compounds.

Self-cleaning gecko feet (UA scientists collaborate to gain understanding of self-cleaning gecko foot hair)

Researchers have taken another step forward in understanding how gecko's feet are so simultaneously sticky and non-sticky. These lizards famously cling to almost any surface with little effort it seems whether horizontal, vertical or upside down, and yet the adhesive properties of their hairy feet are not fully understood. After all, if the foot pads are so sticky, how does the creature unstick its feet to move? Shihao Hu at the University of Akron and colleagues have demonstrated how the toe-peeling action of the gecko's stride allows dirt particles that adhere to the setae, the sticky hairs, to be dislodged with each step, refreshing the hairy surface ready to stick to the next point on the rock face, tree, or ceiling. Researchers are keen to understand such details in their quest to find novel adhesive materials that work in a wide range of conditions for countless engineering applications.

Relationship between Attitude and Aptitude for Teaching

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Abstract

Ability or capacity to teach is often termed as teaching aptitude where as predisposition to behave in a specific way to discharge the responsibilities concerned with profession of teaching is known as attitude towards teaching which may either be positive or favorable or negative or unfavorable. These two are often considered as very much significant and leading variables to determine the success or failure in the profession of teaching at any level. Certainly, these two variables may be related with one another in some or other way and determining such relation is the main objective of this study. In this study, an attempt has been made to know about such relationship especially in case of prospective teachers who are aspiring to join the profession of teaching, in near future and this, may help to foster interest among them to teach effectively and efficiently.

Key words: Teaching attitude, teaching aptitude, prospective teachers, teaching profession

Introduction

Aptitude, in simple term, is considered as an inherent or acquired ability or capacity to learn or to facilitate any kind of endeavor. It is also known as an ability to acquire some knowledge or skill or readiness to perform some assignment, in a specific situation or condition. In this way, teaching aptitude may either be an inherent ability or acquired capacity to plan or manage communication with learners in classroom teaching learning situation while minimizing communication gap while motivating them to acquire new knowledge, skill, technique etc. for achieving success for the sake of self satisfaction and actualization.

Comparatively, attitude is known as a pre disposition to behave in a particular way in a certain situation and towards a given object or issue. According to Katz (1960), attitude is a predisposition of an individual to evaluate some symbols or objects or aspects of his world and act in favorable or unfavorable manner.

Teaching attitude, in the word of Good (1945) as depicted in the Dictionary of Education, is a state of mental or emotional readiness to react in any educationally significant situation in a manner that gives first place to the interest of society and teaching profession, that demonstrates appreciation of the situation's educational implications and that indicates ability and desires to coordinate with others towards the situation or problems involved.

Thus, it is obvious that teaching attitude is concerned with mental or emotional readiness of a person to react in a teaching learning situation accordingly where as teaching aptitude is generally concerned with the in born or acquired ability or capacity to

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manage the educational situation or setting in a way, so that one may be able to perform better in a specific work situation, skillfully and effectively to ensure ultimate satisfaction of learners as well as of his own.

Thus, it may be a matter of interest to know whether these two important variables are interrelated in a way, especially in case of prospective teachers, aspiring to join teaching profession in near future and undergoing through the teacher education programme.

It is well known that without having a positive attitude towards a profession, consistency in better performance in teaching learning classroom situation, is hardly visible where as without sound aptitude or ability of effective or efficient performance as a teacher, attainment of expertise may be a difficult task.

There is a proverb: "Many teachers are there, but good teachers are rare". It is true in the sense that all teachers may not have such ability and enthusiasm to perform as better teachers throughout, irrespective of level of their achievement or acquiring or gaining the return of any kind, economic or social. It is often told that: "A poor teacher tells, a better teacher teaches, still better demonstrates and an outstanding teacher motivates and inspires the taught to learn and acquire knowledge, skill and leadership qualities of a high order".

It has been observed that the variables like teaching aptitude and teaching interest are positively correlated. Silberman (1969) found that teaching attitude affects significantly the classroom teaching behaviour of a teacher. Sharma (1984) observed no significant influence of sex on teaching aptitude of teachers. Donga (1987) realized that teaching aptitude is not a factor in controlling the adjustment behaviour of the student- teachers. Kukreti (1990) however, noted a very remarkable result by his study that there is no positive relationship between aptitude and success in teaching.

Rodger (2007) in a study, related with possible aptitude treatment interaction between teaching clarity and student's test anxiety, observed significant beneficial effects of varying degree of teaching clarity.

On analyzing these findings, it is explicit that many attempts have been made to determine relationship or effects of such variables; but in the case of the selected variables, no such fruitful findings are available. As such, the need of the study is justified in terms of existence of some possible relationship between the variables under consideration on one hand and its educational implications on the other; if these two important variables are found related with each other at a high positive level, ensuring change in one may help to bring modification in the other and thus ultimately helping selection of suitable candidates or prospective teachers for admission in various types of teacher education courses.

Discussion

Objectives of the study

In this study, the main aim has been to determine the influence and extent of teaching aptitude of prospective teachers, related with their aptitude towards teaching profession. Second objective is the examination of any variation in teaching aptitude and teaching attitude of prospective teachers, especially in terms of their sex and academic background or streams, concerned.

Hypotheses

For statistical verification, the following hypotheses were framed in pursuance with the above objectives, in null form:

1. There is no significant relationship between aptitude and attitude for teaching among prospective teachers

2. There is no significant influence in teaching aptitude of prospective teachers in terms of their (i) sex and (ii) academic background

3. There is no significant influence or difference in teaching attitude of prospective teachers in terms of their (i) sex and (ii) academic background

Methodology

This study is concerned with descriptive survey design, as data collection was conducted with the help of survey technique and using tools related with such variables (Kothari, 2000).

Though such design requires a large sample size to draw inferences, on account of certain educational and administrative constraints, it was decided to draw a sample of 60 prospective teachers, admitted to study in a specific section of English medium course. Selection was randomly made with 30 male and 30 female candidates from Faculty of Education of Banaras Hindu University. In this sample, 30 prospective teachers belonged to science background or stream, while the other 30, to arts background.

Tools used

For the collection of data, Teaching Attitude Inventory, prepared by Ahluwalia (1974) was used for assessing attitude towards teaching profession in terms of general teaching profession as well as classroom teaching, child centered practices, educational process, pupils and teachers.

To measure the other variable of teaching aptitude, Teaching Aptitude Test, prepared by Jai Prakash and Srivastava (1973) containing main dimensions of teaching aptitude like cooperativeness, kindliness, patience, wide interest, fairness, morality, discipline, optimism and scholarly ability and enthusiasm, was used.

Both of the tests used are standardized tools widely used for measuring the variables concerned and are five point summated type of rating scales, meant for assessment through observation and pursuance of the rating experts.

It was decided to test the null hypotheses framed in pre hand, at 0. 05 level of significance.

Result and analysis

The data obtained in the study along with the statistical treatment for Mean, S. D., coefficient of correlation and significance for different aspects (Garrett, 2005) are   presented in tabular form (Tables 1-5). Short analysis and discussion of results are given after each table for convenience.

To determine relationship between the variables under study, product moment coefficient of correlation was used to compute the r values and the results obtained is reported in table 1.

Table1: Relationship between aptitude and attitude of prospective teachers

S. No.	Variables	N	M	S.D.	r	Significance
1.	Teaching aptitude	60	54.27	35.59	0.328	Significant
2.	Teaching aptitude	60	244.50	33.33		

Table 1 indicates that the value of 'r' obtained as high as 0.328 is much higher than that of the table value (0.174) for 118 degree of freedom. So, the value of r may be treated as significant at 0.05 level of confidence.

Thus, there is a significant positive relationship between the two variables - teaching aptitude and teaching attitude - of the prospective teachers, though not too high. Therefore, the null hypothesis1, according to which there is no significant relationship between teaching aptitude and teaching attitude of prospective teachers, stands rejected.

It is possible that positive attitude of prospective teachers towards teaching may help in developing interest and sincerity in teaching profession which may enable them to
perform their significant responsibility to educate future generation, through transfer of knowledge and values which ultimately will enhance their own ability to perform better.

It seems possible that positive attitude may also help to foster the sense of cooperativeness, discipline and enthusiasm to bring satisfaction in job, among prospective teachers which ultimately may facilitate performance in teaching-learning situation.

Thus, these two variables are positively related with each other and this may be on account of being related with psychological set up and mental conditions of individual.

Secondly, to test the null hypothesis 2, the data obtained are shown in the table 2.

Table2: Teaching aptitude of male and female prospective teachers

S. No.	Gender	N	M	M1-M2	S.D.	t-value	Significance
1.	Male	30	78.11	47.62	28.89	16.39	Significant
2.	Female	30	30.49		23.99		

From Table 2, it is explicit that the mean score of male prospective teachers is comparatively higher (M=78.11) than that of their female counter parts (M=30.49) leading to a mean difference of 47.62 and after computation of t- value on this basis, it was observed that the t-value of 16.39 is greater than the table value (t=2.00) for df=58 at 0.05 level of confidence.

Thus, it may be inferred that there is a significant difference between mean scores of teaching aptitude of male and female prospective teachers of university and the result is in favor of the males due to higher mean score value.

Therefore, the said null hypothesis 2 (i) stands rejected according to which there is no significant difference or variation between teaching aptitude of prospective teachers in terms of sex; male teachers exhibited higher aptitude.

Since, the mean value of teaching aptitude scores of male prospective teachers is found higher in comparison to that of females, it indicated that teaching aptitude of male prospective teachers is relatively greater.

The likely reason is the fact that intention to take up teaching profession and interest to teach well have recently grown markedly among males due to enhancement in pay grade, introduction of grade pay and raising the age of superannuation for teachers along with making provisions of other job facilities on the basis of the recommendations of the sixth pay commission and initiation of right to education act and sarva shiksha abhiyan; it remains not much changed in females as the profession, considered as a good old one for females and remains unable to attract motivated and devoted female prospective teachers to enter into the profession and develop their own carrier.

Adaval (1952) had observed reverse type of results in his study on qualities of teachers under training when females were found dominating over their male counterparts, in terms of teaching aptitude.

Data to find the influence in teaching attitude of male and female prospective teachers, in terms of sex and the results are presented in table 3.

Table3: Teaching attitude of male and female prospective teachers

S. No.	Gender	N	M	M1-M2	S.D.	t-value	Significance
1.	Male	30	256.11	23.80	25.21	2.97	Significant
2.	Female	30	232.31		35.22		

Table 3 also reveals more or less similar type of outcome indicating that the male group of prospective teachers is having comparatively higher mean score (M=256.11) than that of their female counterparts (M=232.31) leading to a mean score difference of 23.80. On computing the concerned t-value, it was observed that the computed t-value of 2.97 is higher than the concerned table value and thus may be considered as significant at 0.05 level of confidence.

Therefore, the null hypothesis 3 (i) stands rejected according to which there is no significant variation or difference in teaching attitude of prospective teachers in terms of their sex.

Since the mean value of male prospective teachers is higher than that of the females, it is obvious that the attitude of male prospective teachers towards teaching is relatively better than that of females. It is also indicating a possible relationship among these two variables.

Such result might have resulted on account of the development of new craze to join the teaching profession among male prospective teachers, who otherwise used to prefer other jobs to teaching profession, even after being trained or selected as teacher, till a few years ago. The change in preference is due to more incentives given by state and central governments to the teaching community than that of ministerial and administrative staff coupled with low tension / risk factors, less transferability in job location/place, better pay packages, company of youngsters, opportunity for continuous improvement, etc., associated with the profession.

In contrast, Ramakrishnaiah (1980) obtained a different pattern in his findings and the results were in favor of female prospective teachers because for males, other professions like medical or engineering or management, were more lucrative and attractive at that time.

Data, to determine variation among the prospective teachers belonging to the science and arts streams or background in terms of teaching aptitude, are given in table 4.

Table4: Teaching aptitude of prospective teachers of science and arts background

S. No.	Academic background	N	M	S.D.	t-value	Significance
1.	Science	30	56.39	33.40	0.34	Not significant
2.	Arts	30	53.19	37.59		

Table 4 shows that the difference between the mean value of teaching aptitude scores of science background prospective teachers is a bit higher (M=56.39) than that of their arts background counterparts (M=53.19); but this difference may be due to a mere chance factor as the t-value computed on this basis (t=0.34) is not found significant, at .05 level of confidence.

Thus, the null hypothesis 2 (ii) is accepted according to which there is no significant variation or difference in teaching aptitude of prospective teachers belonging to the science and arts background.

Since, the assumption or hypothesis is in agreement with the findings, it may be seen that no new knowledge is acquired through the verification of hypothesis and therefore, no discussion is desired, at this point.

Similar result was obtained in the case of prospective teachers belonging to science and arts background in terms of their attitude towards teaching profession, as seen in table 5.

Table5: Teaching attitude of prospective teachers of science and arts background

S. No.	Academic background	N	M	S.D.	t-value	Significance
1.	Science	30	251.55	33.89	1.69	Not significant
2.	Arts	30	237.31	31.92		

Table 5 also indicates that there is no significant variation or difference between two mean values of prospective teachers with science and arts background, in terms of their attitude towards teaching profession as the obtained t value is found lower (t=1.69) than the table value (t=2.00).

Thus, the null hypothesis 3(ii) "there is no significant difference or variation in teaching attitude of prospective teachers belonging to the science and arts background" is accepted. This finding also attracts no attention for any discussion on account of generating a pre assumed result.

Educational implications

The study indicates outcomes of far reaching significance through indication of positive and significant relationship between variables like teaching attitude and teaching aptitude of prospective teachers.

Though, wide generalization of results is possible by re-implementing the research study on a larger sample, it may safely be said that change in attitude of an individual may lead to develop aptitude or ability to perform better in a specific work situation; in the near future, this evident relationship might pave the way for more to take up the profession of teaching, a rewarding carrier in this modern age of competition and professionalism in human resource development.

This may also ensure desirable behavioural change among prospective teachers which is explicit through the results, discussed well because introduction of a limited incentive for teachers has successfully reversed the previous findings and helped male prospective teachers to take a lead over females who were hitherto considered as more suitable for this profession.

This may enhance effectiveness in function of educational institutions too especially in cases of boys' schools and teacher education institutions, when government is investing enough to open new central university for females.

To boost teaching attitude and to bring to a higher positive level, some psychological measures may be initiated at teacher education institutions through which a significant change in the existing scenario may become a reality.

The educational implication of the findings is imperative in case of prospective teacher educators, who are to be subsequently responsible to undertake the charge to teach and train prospective teachers in near future. Well educated, professionally sound, skillfully trained, responsible and accountable teacher educators form the asset of our nation and preparation of such teacher educators is possible if attempts are made to raise the level of their attitude towards the profession, psychologically in our teacher education institutions in general and self financing economy based teacher education institutions, in particular, unable to prepare well trained and educated prospective teachers.

Let the finding of this study generate rays of hope to take a possible lead over the existing situation of corruption and inefficiency oriented educo-economic pattern and teacher-politician dominated educational and teacher educational system of the country, in future.

Conclusion

Assessment of the relationship between attitude and aptitude and any influence of sex or the nature of the background knowledge on them, made by the survey method on a selected sample of 60 teacher-pupils has yielded results different from earlier studies and more promising and satisfying state of attitude and aptitude for the professionals in future. Male candidates exhibited dominance over the female ones both in attitude and aptitude; a reversal of observation from the past studies. The background knowledge (science or arts) had no effect in the chosen parameters for the sample.

The reversal of the effect by the difference in sex and the higher level of attitude and aptitude observed now are attributed to the attractive financial and academic atmosphere provided for the teaching professionals in India for the last eight years

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Employability of Fashion and Garment Making Students from Youth Polytechnics of Kenya

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Abstract

Skills training in fashion and textiles should lead to employability and job creation for its graduates. This is important for youth development and industrial growth as envisaged in Kenya's vision 2030. This paper reports on the different views collected from the employers in fashion and clothing industries who include: clothing factory managers, tailors, designers and trainers in Gatundu and Thika districts. A questionnaire was used to collect responses from 30 respondents selected through stratified random sampling. The questionnaire sought responses from the stakeholders on the competencies required for the Youth polytechnic fashion and garment making trainees to fit appropriately into the job market. The data obtained were qualitative in nature and exposed gaps in occupational skills - interpersonal, empowerment and critical thinking. The findings of the study are likely to benefit curriculum developers for youth polytechnics (YPs) and Vocational training centres' (VCTs) programs, the teachers, students and the fashion and textile industries who are the main employers.

Key words: Occupational skills, employability, fashion and garment making, youth polytechnics

Introduction

With the introduction of free primary education in 2003 and subsequently followed by subsidized secondary education in Kenya, there has been an increase in the number of students, completing primary and secondary education every year. Out of this cohort, only 46% percent are able to proceed with education either due to inability to meet the required marks for admission into the higher levels or parental inability to support them. Most of these students look for alternatives such as youth polytechnics (YP) to acquire craftsmanship skills. The government of Kenya (GK) has revitalized the youth polytechnic to offer skills training for job creation as an alternative to higher education. There are over 700 youth polytechnics in Kenya offering Industrial and Vocational course to the youths aged between 12 and 24 years, while in Gatundu and Thika districts, there are over twenty youth polytechnics and each of them offers fashion design and garment making as a course among others.

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In sub-Saharan countries, including Kenya, skills development has proven to be incapable of meeting the changing needs of the labour market. Many of the graduates do not succeed in finding employment upon completion of training. In all these countries, vocational training suffers from the socio-cultural problem that it is considered inferior and designed for the less privileged and in some instances it is viewed for servitude. Vocational training in Germany takes place in a dual system where 80% of training takes place in the industry while 20% in school. This entails sharing training responsibilities between the state and employers. The training system is employer-driven while continuing education is based on three tenets - action, practice and application oriented.

The youth polytechnic (YPs) and Vocational training centres VCTs), play a vital role in providing relevant skills to the youth for self-employment or job creation and supply of skilled labour for industrialization. The government of Kenya therefore considers them as basic educational institutions, offering primary school qualifiers opportunities to acquire quality skill and knowledge to enhance their employability and provide ways for attaining higher education and training. They are also expected to equip the youth with technical, entrepreneurial, ICT and life skills based on appropriate technology, thereby enabling them to unleash their entrepreneurial capacity in employment creation and sustainable livelihood.

A number of problems have been identified as key factors, hindering youths from engaging in decent wages of self-employment after training. Most of the vocational training is offered in public youth polytechnics which are ill-equipped with basic hand tools and equipment. Also, sizable number of instructors lack exposure to modern technology. Industrial attachment seems to be haphazard and uncoordinated; hence most of the graduates are not adequately grounded in modern technology (UNESCO, 2011). YPs' graduates may have masterly theoretical knowledge but lack occupational, interpersonal and critical thinking skills, and the necessary confidence required for one to perform competitively (UNDP, 2012). This situation is not peculiar to Kenya alone; Husman (2005) noted similar situation in Malaysia and Kathleen (2005) observed that in USA technical college graduates do not fit well in employment due to lack of employability skills. The existing infrastructure/equipment in public YPs and Vocational training centres (VCTs) in Kenya are dilapidated, inadequate and require renovation and modernization, if they are to produce high quality graduates (Kings, 2005).

As envisaged in the National Youth Policy (2008) vocational training is imperative to harness creativity among the youth and provide them with tenets required for self and wage employment. Fashion design and garment technology is among the courses offered in the youth polytechnics where majority of the students opting for the course is girls. Kinyanjui (2007) observed that youth polytechnics graduates with fashion and garment making skills could not get jobs in the modern textile industries. The current trend in the labour market has shifted towards multi-skilling and skill updating to cope with the latest technological advancements, innovation and job expectations. In a trade like fashion and garment making, the YPs still use old manual sewing machines while in the labour market, for example the export proceeding zone (EPZ), requirement is knowledge in the use of state-of-the-art electric sewing machines and computer programmes. As such, youth polytechnics need to have well focused training programme which can support and enhance productivity in the garment manufacturing sector. This sector accounts for the majority of small business in rural and low income urban areas and thus, it is a major employer in Kenya.

Employers stress the importance of the occupational skills and demand other skills which enable an employee to carry out task efficiently, confidently as well as relating well with the employer and other worker. A properly trained graduate therefore should be competent in three skill categories (Table 1).

Table1: Category of skills

Occupational skills	Transferable and critical thinking skills	Interpersonal and empowerment skills
• Use of equipment safely and effectively	• Leadership skills	• Flexibility and adaptability
• Selection and use of tools	• Language skills and numeracy	• Decision making
• Reduction on waste materials and costs	• Computer literacy	• Managing changes
• Observation of quality control	• Lifelong learning and technology	• Team work
• Increasing productivity	• Problem solving	• Communication skills
• Understanding of drawing and sketches		

Discussion

Purpose of the study

The purpose of the study was to examine the employability of fashion and garment making students from youth polytechnics as perceived by employers in Gatundu and Thika districts, Kenya.

Objectives of the study

This study was guided by the following objectives:

i. To find out employers perceptions on the adequacy of occupational and vocational skills among the youth polytechnic graduates

ii. To understand employers perceptions on empowerment and interpersonal skills among the youth polytechnic graduates

iii. To determine employers perceptions on the adequacy of youth polytechnic graduates' transferable and critical thinking skills

Research methodology

The study employed descriptive survey design (Kothari, 2000). The study was carried out in Gatundu and Thika Districts in Kiambu County, Kenya. The Target population of the study included all garment making and selling business in Gatundu and Thika towns, who are potential employers of youth polytechnic graduates. Accessible population included clothing factory managers, tailors, designers and trainers in the study area.

Thirty (30) garment related business houses were purposively selected for this study. Stratified random sampling was used to select ten (10) potential employers in Gatundu and fifteen (20) in Thika towns respectively. The researchers used face to face in-depth interview procedure to collect data from the respondents. Descriptive statistics of frequency (f) and percentage (%) was used to analyze the data (Garrett, 2005). A response of 50% and above was considered as adequate while those below 50% as inadequate.

Findings of the study

Potential employers of youth polytechnic graduates were asked to give their views on the adequacy of occupational and vocational skills (ability to contextualize classroom knowledge into work environment) possessed by these graduates. Their responses were rated as adequate or inadequate and are summarised in Table 2.

Table2: Employers' views on youth polytechnic graduates' adequacy of occupational and vocational skills

Skills	Number	Adequate		Inadequate	
		f	%	f	%
Safe use of tools and equipment	30	11	36.7	19	63.3
Selecting materials and reduction of wastage and cost	30	26	86.7	4	13.3
Accomplishment of tasks to increase productivity	30	30	100	0	0
Interpreting information, drawings and sketches	30	10	33.3	20	66.7

Table 2 shows the various competencies that could be referred to as being necessary for one to be regarded as having appropriate occupational and vocational skills for employment in fashion and garment making industry. Majority of the employers (86.7%) perceived the graduates as having adequate skills to select materials and reduce wastage and cost during the production process. All the respondents (100%) also considered these graduates as having ability to accomplish tasks to increase production. However, 63.3% of them (and 66.7 %) felt that youth polytechnic graduates were inadequately prepared in the safe use of tools and equipment and 66.7% in interpreting information, drawings and sketches.

Employers were also sought their views regarding youth polytechnic graduates' empowerment and interpersonal skills related to professional and work ethics. Their responses, rated as adequate or inadequate, are summarised in Table 3.

Table3: Employers' perceptions regarding youth polytechnic graduates' empowerment and interpersonal skills

Skills	Number	Adequate		Inadequate	
		f	%	f	%
Decision making	30	9	30.0	21	70.0
Team work	30	20	66.7	10	33.3
Professionalism	30	11	36.7	19	63.3
Flexibility	30	8	26.7	22	73.2
Punctuality	30	21	70.0	9	30.0
Personal appearance	30	13	43.3	17	56.7
Customer relations	30	5	16.7	25	83.3

Youth polytechnic graduates' empowerment and interpersonal skills presented in Table 3 shows that employers perceived them as being inadequate in most of the competencies; decision making (70%), professionalism (63.3%), flexibility (73.2%), personal appearance (56.7%), and customer relations (83.3%). It was only in the area of teamwork (66.7%) and punctuality (70%) they were found to be significantly competent

When asked on their perception of the transferable and critical thinking skills possessed by the youth polytechnic graduates, potential employers responded as depicted in Table 4.

Table4: Employers' perceptions on the adequacy of youth polytechnic graduates' transferable and critical thinking skills

Skills	Number	Adequate		Inadequate	
		f	%	f	%
Problem solving and analysis	30	10	33.3	20	63.3
Leadership skills	30	15	50.0	15	50.0
Use of language and numeracy	30	13	43.3	17	56.7
Lifelong learning	30	8	26.7	22	73.3

According to the data (Table 4) employers perceived graduates from youth polytechnic as being inadequate in problem solving and analysis (33.3%), use of language and numeracy 43.3%) and lifelong learning (26.7). However, they were found to be marginally adequate in the area of leadership skills (50.0%). Generally this may imply that youth polytechnic curriculum   was not helping trainees to acquire much of transferable and critical thinking skills.

Discussion of results

Occupational skills refer to technical proficiencies in a trade area like-garment making. With changes in most work places, occupational skills include multi-tasking in various competencies. From Table 2, majority of the employers (86.7% and 100%) found graduates as having adequate occupational and vocational skills of selecting materials and reducing wastage and cost, during the production process as well as capable to accomplish tasks to increase productivity respectively. On the other hand, majority of the employers (63.3%) perceived youth polytechnic graduates as being inadequate on the occupational and vocational skills of safe use of tools and equipment regarded in this study as the ability to handle tools, identify risks and ability to imbibe the required art of the work place. These are important qualities in an employee as they enhance production and ensure a safe and healthy working environment. This finding is in agreement with UNDP (2012) contention that industry employers found graduates of YPs and VCTs as experiencing difficulty in using modern equipment and that they lacked adequate trade skills, innovation and creativity mainly due to limited practical exposure. Ability to interpret information, drawings and sketches was also reported as being inadequate by 66.7% of the respondents. This is an important skill especially in fashion and garment making because it determines the ability of the designer to interpret specifications given by the customer's verbally into a garment sketch and eventually a finished garment.

This skill may assist the business to retain, gain or lose customers. Perceived inadequacy may be attributed to low entry behaviour of youth polytechnic trainees. This finding is in support of the observation of Bishop (1995) that low entry behaviour leads to inability to contextualize the theories and practices learnt in class rooms into the work places. The finding that youth polytechnic graduates were found to be inadequate in most of the occupational and vocational skills is in agreement with Kinyanjui's (2007) observation that garment factories in the export processing zone (EPZ) in Kenya have to re-train the graduates for employment as they lacked the occupational skills to perform beyond traditional skills required in a modern work place.

Raymond, Romanczy, Sarawhite and Jennifer (2005) described interpersonal skills as ability to communicate and interact with other people, while empowerment is the ability to make decisions and implement change in one's own life and those of other people. Further, they noted that employees with interpersonal skills are more confident and charismatic and appeal to others, increases productivity in an organization and have the ability to control emotions. In this study, empowerment and interpersonal skills attributes were considered to be decision making, team work, professionalism, flexibility, punctuality, personal appearance and customer relations. From Table 3, apart from team working (66.7%) and punctuality (70.0%) all the other skills were perceived as being inadequate amongst youth polytechnic graduates. This observation agrees with UNDP (2012) advancement that besides low technical skills, the graduates were also weak in work attitude, communication, customer care, behaviour and social skills. This may imply that there is disconnect between the skills offered in YPs and those perceived as appropriate by employer and society at large. The reason for this difference may be understood from the premise that while occupational skills are taught in a class setting, interpersonal and empowerment skills are internalized better when trainees are exposed to different environment where they can apply the skills (UNESCO, 2011). This finding can have serious consequence on the fashion design and garment making enterprises whereby direct communication and interactive skill with customers is very essential (Chuter, 1995). Inadequacy of these skills may therefore interfere with the self confidence in the graduates and hence affect their ability to work independently, communicate with customer and present themselves in the proper way, all leading to limit their chances of getting jobs.

Concerning to data in Table 4, Sazama and Young (2006) regarded transferable and critical thinking skills as the skills that apply across a variety of jobs and life context and considered as employability or core skills. They are essential if one has to perform effectively at any given level. In this study, transferable and critical thinking skills were defined by the attributes of problem solving and analysis, leadership skills, use of language and numeracy skills as well as lifelong learning. The respondents perceived youth polytechnic graduates as wanting in all the attributes; their responses being problem solving and analysis (63.3%), leadership skills (50%), use of language and numeracy skills (56.7%) and lifelong learning (73.3%). Inadequacy of transferrable skills may affect the YPs graduates' initiative and entrepreneurial skills which are necessary for self-employment and individual's ability to plan, organize and manage oneself. Raiskums (2005) postulated that problem solving and analyzing requires higher order thinking skills that are involved in observation, interpretation, analysis, evaluations and inference (critical thinking). This calls for the ability to recognize problems and find workable solutions. On the other hand, lifelong learning involves the desire to develop and improve oneself. YPs graduates inadequacy of this skill may imply that such employees might not be ready to learn new methods in the trade or embrace the dynamics of technology in the fashion and garment industry. Transferable and critical thinking skills are high level attributes and mostly enhanced through the level of academic education and life experiences. However, youth polytechnic trainees' entry behaviour is not pegged on academic ability, but on physical dexterity and interest (Wamutitu and Kamau, 2010).

This arrangement may have limited their ability to think critically through problems and situations to develop objective solutions and hence employer perceived them as being inadequate in this skill. As a result fashion and garment making industry is among the highly labour intensive industries in Kenya and employs very traditional methods in the production processes. Lack of transferrable skills not only affects adversely the employee but also the growth of this industry and the quality of the products

Conclusion

The present study points to the fact that employability of fashion and garment making youth polytechnic graduates is dependent not on mastery on vocational skills alone, but more so in the adequacy of occupational, empowerment and interpersonal and transferable skills. This is supported by King and Mc Gath's (1996) observation that the marketability of vocational graduates' skills, depends on the exposure to other non-practical skills such as problem solving, communication, attitude and entrepreneurship. Youth polytechnic trainees have great potential in innovation and creativity. However, they lack the right combination of skills, motivation, ideas and opportunities to motivate themselves to be effective employees or establish productive and creative business ventures and thus transform themselves from employment seekers to employment creators. Unfortunately the existing institutional infrastructure, staff, equipment, financing mechanisms and governance in most of the public YPs and VCTs are inadequate to effectively produce high quality graduates for vision 2030. A number of business concerns in the informal sector still use traditional and labour intensive skills for want of a change over to new technology and tools, more relevant to occupational/vocational skills. Skills training in public YPs and VCTs should be demand driven; while the government should partner with the fashion and garment making industry to develop the training curricula, the industry sets the required standards. This is currently missing, rendering many YPs graduates unemployable in the modern fashion and garment making industry in Kenya.

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Ultrasonic flakes of graphene (Graphene? From any lab!)

The most well known approach to making the carbon allotrope graphene, which is akin to single graphite sheets, was to peel pencil "lead" (graphite) from a glass surface using sticky tape. Making multilayer graphene flakes however was a little harder. Now, researchers from the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw, and the Interdisciplinary Research Institute in Lille, France, have developed a low cost method for manufacturing multilayered graphene sheets. The team begins with graphene oxide and mixed it with tetrathiafulvalene in an ultrasonic cleaner to remove oxygen atoms from the graphene flakes through the formation of non-covalent pi-pi stacking interactions. Other than the sonicator, the approach needs no specialist equipment, nor sticky tape.

Drugs on tap (Drugs on tap: Ultra trace detection)

A team based in Spain has tested drinking water samples from Europe, Japan and South America for various legal and illicit drugs. Their analysis revealed the presence of caffeine and nicotine as well as cotinine, cocaine and its metabolite benzoylecgonine, methadone and its metabolite EDDP. However, while caffeine was present at relatively high levels, the researchers describe the presence of cocaine and illicit drugs as at only ultra trace levels on the boundary of detectability. The presence of pharmacologically active agents in the water supply has been an ongoing environmental concern, with worries about the presence of estrogenic compounds and toxic chemicals. The work by the team provides a new baseline for a wide range of compounds for future studies and epidemiological work.

Current Issues in the School Curriculum

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Abstract

Curtailment of funds for public schools, inadequacy of mandated testing, bullying, Non-satisfactory attention to physiological needs of pupil, lack of proper health care, absence of a suitable curriculum and its periodical updating, to suit modern facilities and requirements, Non-emphasis of thinking, integrating known ideas and facts from other disciplines, lack of valid and reliable appraisal techniques to aid the teacher assess the students' ability and initiative to learn and apply new information, etc. form the main current issues or challenges in school curriculum. Explaining each of them probable, plausible and desirable suggestions are offered based on the personal experience as well as information from other sources.

Key words: School education, curriculum improvement, issues, solutions

Introduction

There is global competition and all possible efforts to provide quality education to the young people at school level to equip them for higher studies and transformation to world citizens with better adjustment, adaptation and success in life to serve themselves, humanity and the world at large. With the rapid progress in science and technology resulting in the use of an array of electronic gadgets and other aids for teaching-learning processes, the school pupils need orientation and updating in their learning process. While the educationists and administrators are eager to achieve the goal and catch up the target, many are oblivious of the real obstacles and challenges faced by many pupils from public schools. A few of the issues and challenges personally experienced and known from other sources are briefly presented.

Discussion

Spending for public schools by each state has been greatly curtailed. The reduced spending has caught up with the lower state aid available to the local school district. Adequate amount of money must be spent on teacher salaries, materials of instruction, educational technology, textbooks and library books and in-service training, among other necessities. Today's children will be the adult citizens of the future. Each pupil needs an education which will bring out the best in the individual and provide for optimal progress. The question arises: "How an increased amount of money might be secured for the public schools? " State legislatures cut appropriations in order to reduce taxing people.

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The argument here, given by the governor and the state legislature, is that lower income tax brings in more businesses into the local state. The flip side of this argument point to the following:

* business establishments also desire high quality schools for their offspring, and
* pupils need to realize optimal school achievement in order to do well in a complex world

There are selected issues which face schools in curriculum development. These need thorough study by those involved and are affected by decisions made. There is a plethora of outside forces as well as those that are involved within the school setting which affect outcomes of choices studied and implemented. School personnel must become students of education and of the curriculum (Ediger and Rao, 2012).

Second, mandated testing has been weighed and found wanting. The No Child Left Behind Law of 2002 (USA) whereby each state in the nation developed their own criteria for tests found that there was great variation on the complexity of test items among these tests. Now, the emphasis is on the Common Core State Standards adopted by forty six states in USA. The tests for each grade level will be the same, thus avoiding the difficulty levels of test items among and between the states. More uniformity will be in evidence when comparing pupil achievement from state to state. However individual differences among pupils will exist in the following:

* the rapidity in responding to the test; some need more time than others in test taking
* learning styles of pupils in taking pencil/paper testing as compared to a hands on approach in revealing what has been accomplished
* thinking and creativity are minimized by pupils when taking objective test items, such as multiple choices

Third, bullying in schools has truly been a problem which needs identification and solution in each school. Bullying creates fear of perpetrators and hinders achievement greatly. Then too, it is not good for perpetrators to get away with offending others. This hinders their development socially and emotionally. Each case of reported bullying needs to be examined carefully and recorded with remedies in the offing. What bullying is must be defined clearly so that perpetrators might know who they are.

People who are bullied as children/adults in college or at the work place face very uncomfortable as well as embarrassing situations. For some it has been death or even suicide following years of physical abuse with school administrators turning their backs on victims and their complaints. This must stop with quality-enforced regulations against bullying.

Fourth, physiological needs of pupils must be met in school. Thus, breakfast and dinner need to be served and made available to all pupils. This still leaves a weakness with one omitted meal in the evening. Sending home a package of food, adequate for the week end is a must. Approximately 17% of school aged children live in poverty in the US, and sixty per cent are on free and reduced priced school meals. This should be the right of every child along with peaceful living in clean, safe and home environment.

Fifth, medical care too, is lacking frequently for pupils. Learners can achieve well only if salient health care is provided. In the cold month of January, we supervised student teachers at a school in which we could not hear the student teacher's voice due to hoarse coughing and sneeze, by pupil with running noses. In early fall, there are pupils who have allergies to the extent that prevents their possible achievement. There are medical needs which should be available for all pupils; in addition, dental care is a privilege and not a right. Those who argue for a smaller government would generally like to see social services cut in order to have more "money in the pockets" of individuals, as a cost cutter. These are cases involving morality and empathy when helping people in need (Ediger, 2009).

Sixth, the curriculum must be updated with the latest innovations in assisting learners to do better in school and in society. This is costly; more so if a modern curriculum does not exist. For example, electronic readers would help many pupils to learn to read better than otherwise is the fact. Thus, a pupil can go ahead independently with an electronic reader which provides assistance as necessary in vocabulary and reading difficulties. The electronic reader may provide oral content in which the learner may follow the pronounced words in print. Rare and unknown vocabulary terms may be highlighted and the appropriate definition seen on the monitor. Independently, the pupil will move forward in the chosen subject matter. This would do away with problems, to a large extent, in word recognition and make for more fluent reading. Innovations need to be tried out to notice if pupils do achieve more optimally. Education is costly, but is more costly if pupils leave school without the tools of being successful in reading and the language skills, arts, science, social studies, the fine arts and physical education. Physical education, as a quality course, is indeed necessary to curb obesity.

Seventh, thinking must be emphasized in each curriculum area. The concept of thinking may be divided into component parts; but needs to be integrated into ongoing lessons/units of study:

* critical thinking involves analyzing ideas into facts versus opinion, accurate from the inaccurate, as well as the relevant from the irrelevant
* creative thought, whereby novelty, uniqueness and originality are stressed

Eighth, integration of subject matter from the different academic disciplines is to be emphasized if this aids pupils in establishing meaning and understanding. Otherwise, there is appropriateness in maintaining clarity between and among these disciplines. Thus, in a unit of study, the teacher must be savvy in knowing how much integration in relating the diverse disciplines is to be emphasized. In many situations, it is good to have learners perceive the relationship of concepts and generalizations which cut across the diverse subject matter areas. Too frequently, each lesson/unit of study has stressed isolated facts with little/no attempts at uniting ideas and thoughts from the academics. Isolated subject matter is more difficult to retain and recall as compared to that which joins together whereby pupils may connect the previously acquired concepts and generalizations with the ensuing content to be achieved.

Ninth, valid and reliable appraisal techniques need to be utilized to aid the teacher in understanding what learners have accomplished. For the classroom teacher, face validity is very appropriate to utilize. Here, the teacher writes a test item for each major concept/generalization taught. The test item may be multiple choices with four equivalent distracters or an essay test. Oral testing might also be stressed with questions asked and responses given by learners, on the spot. In the latter approach, pupils individually at random will be asked to answer. This does lack the at random procedure, but will give the teacher some idea of how well pupils are achieving. In general discussions, each day, the teacher also has to notice who responds and who doesn't. All need to be brought into the discussion, as far as possible. Each item stressed in teaching and learning situations, is to be recorded by the teacher, and a random sampling of what has been taught can be selected for writing the test items.

Periodically the teacher might wish to give the same test over again in a few days, to check reliability or consistency of measurement for each pupil. From standardized tests, validity and reliability data are provided in the Manual of the company, publishing the test (Ediger, 2012).

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HIV Protein cures Self

An Australian scientist said on Wednesday that he had discovered how to turn the HIV virus against itself to stop it progressing to AIDS, a major breakthrough in finding a cure for the disease. David Harrich, from the Queensland Institute of Medical Research said, he had successfully modified a protein in HIV that the virus needed to replicate and instead made it 'potently' inhibit virus growth. He said the protein – Nukubasic – had shown a remarkable ability to arrest HIV growth in a Lab and could have exciting implications both in curbing AIDS and treating existing HIV sufferers.

Evolving glass (Study reveals extraordinary glass properties)

Ultra stable forms of glass can be evolved, or aged, in a matter of days rather than having to wait thousands of years for their atomic structure to settle down to a lower-energy form. Computational and experimental studies suggest that a vapour-deposition process might allow researchers at the University of Chicago to design a new class of materials at the molecular level. Juan de Pablo of the University of Chicago points out that amber is an aged glass, but its particular structural properties cannot be emulated in the laboratory yet. Finding ways to make materials with related amorphous, glassy structures, could lead to stronger metals or even faster-acting pharmaceuticals that do not crystallize in storage and so are more rapidly delivered once ingested. Thankfully, Ulrich Schneider and his colleagues are not claiming to have broken the laws of thermodynamics. "We have achieved an inverted Boltzmann distribution, the hallmark of negative absolute temperature", Schneider says. The inversion of the gas's energy and the manifestation of a negative absolute temperature mean that the gas is actually hotter than a positive temperature and is essentially a consequence of the limited definition of the Kelvin scale.

Beyond the absolute (A temperature below absolute zero)

Physicists at the Ludwig-Maximilians University Munich and the Max Planck Institute of Quantum Optics in Garching, Germany, have created an atomic gas in the laboratory that apparently displays a negative value on the Kelvin temperature scale - its temperature is below absolute zero, in other words. A negative absolute temperature, while seemingly impossible by definition, has several absurd consequences such as atoms attracting each other without condensing and so displayed a negative pressure. The claim would also imply that a heat engine with greater than 100% efficiency might be possible.

Teacher Educators' Perception towards Pedagogical Benefits of Wiki

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Abstract

Wikis are considered as one of the best ways of combining Information Communication Technology (ICT) with teaching and learning methodologies in a classroom. The application of blogs and wikis in higher education, particularly in teachers' preparation programs, has been documented very recently (Dunaway, 2011). The majority of teachers are neither familiar nor skilful in employing this tool in the process of learning. Exposure to this tool during pre-service and in-service preparation program is helpful in promoting its use it in teaching career (Bassoppo-Moyo, 2006). This paper is an attempt to study and report on the perceptions on the learning experiences of teacher educators' use of wikis and the advantages of incorporating this web technology into the curriculum. The main aim of the study is to assess the perception on the pedagogical benefits of wiki among the teacher educators of Tirunelveli district of T.N., using the survey method. Based on the data collected and inferences made on a sample of 150 teacher educators, the investigator concludes that: (a) Average level of perception on pedagogical benefits of wiki is seen among the teacher educators and (b) There is no significant influence in their perception on pedagogical benefits of wiki with respect to their gender, age, subject, marital status, year of experience and educational qualification.

Key words: Perception, pedagogy, wiki, web 2.0 application

Introduction

The use of ICT in teacher education programs has been gaining interest throughout the world. This interest places pressure on faculties of education to prepare a new generation of graduates capable of integrating a variety of technological tools into their personal and professional lives (Starkman, 2007). Argued that enabling teachers to make effective use of ICT as a tool for deep learning should be top priorities for both pre- and in-service programs, to overcome the most important challenge of the teaching profession, which is the preparation of students equipped with the skills needed for 21st century requirement. The explosion of technological growth with Web 2.0 applications has opened up new learning possibilities for educational programs and blogs are a promising example of these new applications (Keegan and Desmond, 2002).

With the rapid development of wiki technologies, wikis are widely applied to encourage authors to participate in collaborative writing in order to create writers with higher writing ability and positive writing attitudes. A wiki is a tool that enables the collaborative creation of sets of web pages (Lam Paul, Mc Naught and Carmel, 2007). The main distinctive feature of any wiki site is that anyone can edit it. The underlying concept of a wiki is the fact that it acts as a collaborative tool and hence facilitates more effective production of a group work. There are now thousands of wikis on the internet and their number is growing rapidly. There are three important characteristics that differentiate wikis from traditional websites (Littlejohn and Allison, 2009). First, one does not need to download any software to work with wikis.

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Second, learning how to edit a wiki is very easy and intuitive. Third, by default, wikis are designed to support collaborative projects and allow virtually anybody to edit anything. Variously described as a composition system, a discussion medium, a repository, a mail system and a tool for collaboration, wikis provide users with both author and editor privileges; the overall organisation of contributions can be edited as well as the content itself. Wikis are able to incorporate sounds, movies and pictures; they may prove to be a simple tool to create multimedia presentations and simple digital stories.

Discussion

Operational definition of key terms

Perception

Perception presents individual feeling for or against something. In other words the degree of feeling of favourableness or unfavourableness towards some objects, person, groups or ideas is called perception.

Pedagogical benefits

Pedagogy is the study on process of teaching. The term generally refers to strategies of instruction or style of instruction. Pedagogy is also occasionally referred to as the correct use of instructive strategies. The investigator examines how wiki and weblogs are used in teaching and learning process and how to integrate wiki during these processes.

Wiki

A wiki is a web site that allows users to add and update content on the site using their own web browser. Wiki is a piece of server software that allows users to freely create and edit web page content using any web browser. Wiki supports hyperlinks and has simple text syntax for creating new pages and cross links between internal pages.

Teacher educators

Those who are teaching at primary and secondary teacher education institutions are called 'Teacher educators'

Objectives of the study are to find:

* The level of teacher educators' perception on pedagogical benefits of wikis

* The length of experience in internet usage among the teacher-educators

* The frequency of the teacher educators' experience with internet

* The length of experience in wiki usage among the teacher educators

* The frequency of the teacher educators' experience with wiki

* Any significant difference in the teacher educators' perception on pedagogical benefits of wiki, assessed by the mean scores, influenced by their gender, age, subject, marital status, year of experience and educational qualifications

Hypotheses of the study

The hypotheses of the present study are tabulated as follows:
There is no significant difference in the mean scores of teacher educators in:

1. Their perception on pedagogical benefits of wiki with respect to their gender

2. Their perception on pedagogical benefits of wiki with respect to their age

3. Their perception on pedagogical benefits of wiki with respect to their basic subject

4. Their perception on pedagogical benefits of wiki with respect to their marital status

5. Their perception on pedagogical benefits of wiki with respect to their length of experience

6. Their perception on pedagogical benefits of wiki with respect to their educational qualification

Method adopted in the study

In the present study, the investigator has employed the 'survey method'. Survey method is a method for collecting and analyzing data, obtained from large number of respondents representing a specific population, collected through highly structured and detailed questionnaire or other techniques (Best, 1983).

Population and sample of the study

In this study, all the teacher educators working in college of education at various colleges irrespective of the nature of management and other criteria but located in Tirunelveli District, Tamil Nadu e form the population for the study. A good sample must be representative of the entire population; for this y, 150 respondents are chosen using random sampling technique.

Instrument

As there existed no suitable tool available for the present study, the investigator has constructed and validated a scale to measure perception of teacher educators on pedagogical benefits of wiki. In order to achieve the objectives of the study, the investigator used a self-prepared questionnaire on PPBW (Perception on Pedagogical Benefits of Wiki). The investigator, besides referring various books and journals to have a clear concept, sought the opinion of a few subject experts for the development of the tool. The pedagogical benefit of wiki's perception tool prepared thus was used for the present study. The tool was constructed for a 'three point scale'.

Statistical techniques used

Statistical techniques serve the fundamental purpose of the description and inferential analysis (Aggarwal, 1986). The statistical techniques used in this study are Mean, Standard deviations (SD), Percentage analysis and 't' test.

Data collection, analysis and presentation of findings

       The investigator personally visited the B. Ed., colleges with the permission of the concerned head of each institution. The investigator gave written request for their co-operation, mentioning the purpose of the research and the probable useful outcome. The aim of the questionnaire was to know the level of perception on pedagogical benefits of wiki among the teacher educators. The tool facilitated a rating scale; the respondents were expected to circle or tick their level of confidence in a scale of 1-3 for each item of the questionnaire, regarding wiki. The scores were noted and tabulated for statistical analysis. The scores from all questionnaires, along with the personal data, were consolidated. The data thus, collected and analysed are presented in 12 tables (1-12). Brief explanation of table content is given after each table, for convenience.

Table1: Analysis of duration of experience of respondents with the internet

Duration of experience with internet	Number of teacher educators	%
Below 1 year	37	24.7
1-2 yrs	31	20.7
More than 2 - Less than4 yrs	37	24.7
4 - 6 yrs	29	19.2
Above 6 yrs	16	10.7

       Table 1 presents the analysis of experience with internet. As seen, 37 teacher educators (24.7%) have less than one year of experience with internet, 31 (20.7%) 1 to 2 years, 37 (24.7%) 2 to 4 years, 29 (19.2%) 4 to 6 years and only 16 teacher educators (10.7%) have above 6 years of experience with internet.

Table2: Analysis of the frequency of the internet use

Frequency of internet use	Number of teacher educators	%
Daily	45	30.0
On alternate days	44	29.3
Once in a week	22	14.7
Once in a fortnight or so	5	3.3
Once in a month or so	27	18.0
Never	7	4.7

Table 2 provides the analysis of sample in terms of the frequency of internet use. 45 Teacher educators (30.0%) use the internet every day, 44 (29.3%) use it on alternate days, 22 (14.7%) use once in a week, 5 (3.3%) use roughly once in a fortnight, 27 (18.0%) use once in a month and only 7 (4.7%) teacher educators use no internet at all.

Table3: Analysis of internet use in relation to the profile on blog or wiki

Wiki profile	Number of teacher educators	%
Yes	40	26.7
No	110	73.3

Table 3 shows the analysis of sample in terms of the profile on wiki. It is seen 40 teacher educators (26.7%) have a profile on wiki, while 110 (73.3%) do not have any.

Table4: Analysis of the reason for neglecting web 2.0 profile

Reason	Number of teacher educators	%
Having no time for them	44	40.0
Don't want personal details published online	41	37.3
Don't want to have an online presence	31	28.2
Consideration as waste of time	22	20.0
Not knowing about web 2.0 tools	26	23.6
Having technology phobia	14	12.7

Table 4 reveals the result of analysis for the reasons for neglecting web 2.0 profiles like blog and wiki. Out of 150 respondents only 40 are having a profile on wiki. Remaining 110 have no profile on wiki. They neglect the wiki for the following reasons: 44(40%) have not enough time for using web 2.0 tools; 41(37.3%) don't like to share their personal details published online; 31(28.2%) don't like to be online; 22 (20%) consider web 2.0 tools to be a waste of time; 26(23.6%) don't know about web 2.0 tools and 14 (12.7%) expressed a technology phobia.

The second part of the questionnaire of the survey was "Perception on the pedagogical benefits of wiki". The purpose of this item was to determine which Web 2.0 application is widely familiar with teacher educators. This could help to find the most implicitly used tool(s) by them. The respondents were able to select multiple answers. Table 5 depicts the analytical results on this.

Table5: Analysis of pedagogical benefits of wiki

S. No.	Statements	Agree		Neutral		Disagree	
		F	%	F	%	F	%
W1	Wikis are a good tool for teaching and learning	133	88.7	16	10.7	1	0.7
W2	Wikis are effective for collaborative problem solving	88	58.7	54	36	8	5.3
W3	Wikis facilitate group learning and experiential learning	107	71.3	32	21.3	11	7.3
W4	Wikis are useful in online learning environments	114	76	30	20	6	4
W5	One perceives wiki as highly related to English learning	93	62	42	28	15	10
W6	One perceives the use of Wiki as convenient in English learning	102	68	36	24	12	8
W7	Use of wikis increases productivity in writing group assignment / task	82	54.7	58	38.7	10	6.7
W8	Use of wikis makes it easier to do my course work	101	67.3	40	26.7	9	6
W9	It is beneficial to use wikis in for my learning	123	82	19	12.7	9	6
W10	Intention to use wikis to facilitate one's learning	107	71.3	32	21.3	11	7.3
W11	The wiki environment enables one to easily contact with others	99	66	44	29.3	7	4.7
W12	The wiki environment enables one to fully interact with others	84	56	51	34	15	10
W13	The wiki environment enables one to easily work in a group with fellow members	99	61.3	49	32.7	8	5.3
W14	In wiki environment, one obtains support and encouragement to gain learning experience	92	61.3	49	32.7	9	6
W15	Wiki fosters the learning bonds between teachers and students	108	72	35	23.3	7	4.7

Table 5 gives the analysis of opinion of respondents on the perception towards the pedagogical benefits of wiki. Most of them are having a positive opinion about each statement of the pedagogical benefits of wiki, given in the questionnaire. It means that most of the teacher educators maintain a positive perception on the pedagogical benefits of wiki.   Similar changes are taking place with respect to our understanding of the role of vitamin E (α-tocopherol) in living processes. For a long time it was believed that the main function of vitamin E is its antioxidant action in biomembranes. Within the last few years it has become clear that the antioxidant activity of vitamin E is not the only one (and certainly not the most important) of its physiological functions (Ricciarelli et al., 2001; Atkinson *et al.,* 2008; Jones, 2008; Engin, 2009). The common belief of the beneficial health-improving action of plant phenolics has also been revised (Halliwell, 2007).

Objective testing

To find the level of perception on the pedagogical benefits of wiki among the teacher educators, an objective testing was done.

Table6: Level of perception on the pedagogical benefits of wiki

Variable	Low		Medium		High	
	No	%	No	%	No	%
Perception on the pedagogical benefits of wiki	8	5.3	54	36	88	58.7

Out of 150 only 88 (58.7%) respondents have a high level; 54 (36%) have moderate and remaining 8 (5.3%) have low level of perception on the pedagogical benefits of wiki. The level for the whole sample is average.

Hypotheses testing (Null hypotheses, 1-6)

1. There is no significant difference in the mean scores of teacher educators' perception on pedagogical benefits of wiki influenced by their gender

Table7: Influence of gender on perception of pedagogical benefits of wiki

Web 2.0	Gender	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Male	53	38.68	6.65	148	1.05	NS
	Female	97	39.64	4.42			

(At 5% level of significance, the table value of 't' is 1.97)

Table 7 shows that the computed 't' value 1.05 is less than the table value 1.97 at 0.05 level and hence it is not significant. Consequently, the null hypothesis is accepted. Gender has no significant influence on the perception of pedagogical benefits of wiki for the sample examined.

Table8: Level of perception on the pedagogical benefits of wiki

Web 2.0	Age	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Below 35	99	39.20	5.01	148	0.31	NS
	Above 35	51	39.49	5.92			

Table 8 shows that the computed 't' value 0.31 is less than the table value 1.97 at 0.05 level and hence it is not significant. Hence the null hypothesis is accepted. There is no significant influence of age on the perception of pedagogical benefits of wiki.

3. There is no significant difference in the mean scores of teacher educators' perception on pedagogical benefits of wiki with respect to their basic subject.

Table9: Role of basic subject on the perception of pedagogical benefits of wiki

Web 2.0	Basic Subject	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Arts	61	39.11	5.70	148	0.35	NS
	Science	89	39.43	5.06			

(At 5% level of significance, the table value of 't' is 1.97)

Table 9 shows that the computed 't' value 0.35 is less than the table value 1.97 at 0.05 level and hence not significant; rendering the null hypothesis acceptable. There is no significant difference on the perception of pedagogical benefits of wiki caused by difference in the basic subject of the respondents.

4. There is no significant difference in the mean scores of teacher educators' perception on pedagogical benefits of wiki influenced by their marital status.

Table10: Role of marital status on the perception of pedagogical benefits of wiki

Web 2.0	Marital Status	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Married	89	39.91	5.46	148	1.70	NS
	Unmarried	61	38.41	5.01			

(At 5% level of significance, the table value of 't' is 1.97)

Table 10 shows that the computed 't' value 1.70 is less than the table value 1.97 at 0.05 level and hence it is not significant; the null hypothesis is acceptable. Marital status has no role on the perception of pedagogical benefits of wiki.

5. There is no significant difference in the mean scores of teacher educators' perception on pedagogical benefits of wiki with respect to their year of experience.

Table11: Influence of experience on perception of pedagogical benefits of wiki

Web 2.0	Year of experience	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Below 5	97	39.39	4.92	148	0.28	NS
	5 and above	53	39.13	6.03			

(At 5% level of significance, the table value of 't' is 1.97)

Table 11 shows that the computed 't' value 0.28 is less than the table value 1.97 at 0.05 level and hence not significant; the null hypothesis is acceptable. There is no significant influence of years of experience on the perception of pedagogical benefits of wiki for the teacher educators.

6. There is no significant difference in the mean scores of teacher educators' perception on pedagogical benefits of wiki with respect to their educational qualification.

Table12: Influence of educational qualification on perception of pedagogical benefits

Web 2.0	Educational qualification	N	Mean	SD	df	't' value	Remarks at 5% level
Wiki	Without NET / Ph.D.	113	38.98	5.11	148	1.28	NS
	With NET / Ph.D.	37	40.27	5.86			

(At 5% level of significance, the table value of 't' is 1.97)

Table 12 shows that the computed 't' value 1.28 is less than the table value 1.97 at 0.05 level and hence it is not significant, supporting the null hypothesis. There is thus, no significant influence of educational qualification on the perception of pedagogical benefits of wiki.

Interpretations

The results of 't' test point to the following findings in respect of different contributors tested for their role:

Gender

The 't' test result shows that there is no significant difference in the mean scores of perceptions on pedagogical benefits of blog and wiki among the teacher educators with respect to their gender. This may be due their curiosity to know new and innovative things in their environments and also their keen interest on knowing and updating information of new acquisition of resources of all the teacher educators.

Age

The 't' test revels that there is no significant difference in the mean scores of perception on pedagogical benefits of blog and wiki among the teacher educators with respect to their age. This may be due to the fact, that today all pupils have proper education in all aspects. Particularly in Tamil Nadu all people are well educated and are aware of the importance of technological world. All the age group teacher educators are updating their potential and eager to get the knowledge from the electronic devices.

Basic subject

There is no significant difference among science and arts teacher educators in their perception on the pedagogical benefits of blog and wiki. This can be attributed to the universality of technology in its applications. Both arts and science teachers got some exposure of using computers in their school days and likely enhancement of awareness on technological instruments. They have equal opportunity to interact with the society through technology and develop further interest.

Marital status

There is no significant difference among married and unmarried teacher educators in their perception on the pedagogical benefits of blog and wiki. This is due to the common eagerness of all educationists to improve their knowledge and use of new gadgets; marital status does not affect the eagerness and curiosity of the teachers to know about advanced technological devices to start with computer.

Experience and educational qualification

No significant difference among teacher educators was found in their perceptions on pedagogical benefits of wiki, irrespective of their possessing only M.Ed. or M.Ed. and NET or with additional Ph.D. qualification. Also, the different lengths of service of teacher educators did not make any significant difference in their perception. It may be due the fact, that at higher education level, all the teachers are using the computer and internet for various purposes regardless of experience/qualification. All the teacher educators visit the website of Tamil Nadu teachers' education university for updating useful announcements and information on educational matters.

Suggestions for future research

This study examined teacher educator's perceptions on pedagogical benefits of wiki; there was no examination of factors influencing teacher educators' integration of technology into their courses. Thus, teacher educators' participation in any technology-based professional development; colleges providing technological support for open source applications, including Web 2.0; encouragement for the use of Web 2.0 applications from superiors, mentors or students, etc. were not analyzed. Their analysis and finding would be desirable for broadening the understanding on factors supporting the integration of technology into courses, as well as their effectiveness. Another interesting aspect for research is application of the theory of planned behaviour to understand and predict student's intentions and benefits to use Web 2.0 technologies to supplement their in-class learning. An analysis of the students' impressions along with those of the ideas and expectations of the teaching community would throw more light on the use of wiki as well as any mismatch in the approaches of students versus teachers in the use of technological gadgets, as supplement to teaching-learning processes. A more useful inference, serving wider purpose, can be obtained by analysing representative samples over a broader area and extending the study to other professional institutions.

Conclusion

In future, research on wiki use will pay more attention on collecting data and tracking individuals' contributions, types of specific activity and ways of enhancing wiki's support role for students and educationists. Rathore (2009) suggested the role of wiki in the transformation of teaching-learning process from a teacher centred to a student centred one and creation of collaborative research ideas. Teacher's dominance will be replaced by the knowledge dominance (Aharony, 2011). So students learn through computer teacher, live interactive tele-lessons, free television teacher and internet teacher. Naturally, a teacher who applies these technologies in the classrooms will replace a teacher who does not apply them. The investigation and its findings will help educational experts, thinkers, teachers and all those who are interested in the field of education to focus their attention on the present problems and future prospects. These findings and results are not the end of the task; they form just initiation of search for innovation whose application would improve the quality of teaching-learning process.

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Continued from Page 34...

Steroid mass production (Steroids that only Nature could make on a large scale-until now)

A scalable synthesis for polyhydroxylated steroids, which are used in heart-failure medications and other pharmaceuticals, has been developed by chemists at The Scripps Research Institute in La Jolla, California. "Previous synthetic routes to these compounds required so many steps as to be impractical on a large scale", explains Phil Baran, "but we were able to come up with a completely new strategy". The team thus used carbon-hydrogen functionalization and long-range functional group transformations to synthesize the most hydroxylated steroid known ouabagenin. This compound is a chemical cousin of an arrow poison once used by Somali tribes, which was developed into a heart drug. The team's 21-step synthesis will facilitate the development of analogs of these compounds for testing as novel drugs.

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Role of Supervisor in Learning and Achievement

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Abstract

With continual study, analysis, and in-service education, the classroom teacher needs to provide assistance to the pupils for attainment of individual optimum growth, development and achievement. The supervisor of the curriculum must stay abreast and be updated on the latest trends in teaching and learning. Selected principles of learning, encompassing all areas in the school setting and numerous approaches and methodologies, based on sound educational research, are to be tried in achieving and assessing the feed back for proper supervision on the attainment and progress of the pupils.

Key words: Curriculum, supervisor, role, learning and achievement

Introduction

A supervisor is in a position of trust in education. He is the first and foremost overseer whose main responsibility is to ensure that the students learn and achieve. He is responsible for the achievement of students. He should tend to visualize problems and opportunities in terms of the particular areas of his concentration - learning and achievement. He is a senior teacher or scholar who, along with the specific and individual responsibilities, aids and guides students, offering moral support, insight and guidance.

Discussion

The duties and responsibilities of the curriculum supervisor have changed much over the years. Seemingly, rapid changes are occurring at the present time. The curriculum does not remain static, but is subject to change due to a plethora of changes in society. Technology, for instance, is indeed making changes with innovations being brought into the classroom making for workshops and faculty meetings, among others, in updating the curriculum.

Making hasty changes must be avoided; they need to be implemented with much thought and deliberation. Technology and its use must be brought into teaching and learning situations, if other approaches are less satisfactory.

There are numerous approaches and methodologies, based on sound educational research, theory, and practice, which must be tried out for providing more optimal pupil achievement. Feedback, based on these practices, provides information for teacher to use in ensuing pupils activities and experiences (Ediger and Rao, 2013).

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With continual study, analysis, and in-service education, the classroom teacher may assist in providing individual optimum pupil growth and achievement. The supervisor of the curriculum must stay abreast and be updated on the latest trends in teaching and learning.

There are selected principles of learning which encompass all curriculum areas in the school setting. These include the following:

* ample opportunities need to be given to learning by discovery procedures. Here, the teacher guides learners to find information on their own with minimal assistance. The learning by discovery approach may be utilized in problem solving and project methods, in particular

* accurate and clear communication of ideas in giving directions, conveying needed information, or in different facets of lesson/unit teaching. The spoken voice must be well modulated with proper stress and pitch as well as enunciation

* proper sequence needs to be in evidence within each learning activity. With problem solving and project methods of instruction, the pupil, in general, sequences his/her own learning with teacher guidance. With deductive methods of teaching, the teacher must notice that ideas and explanations provided are orderly, to ensure that pupil knowledge acquired might be based on previously achieved ideas

* pupil's purpose needs emphasizing. Thus, the learner perceives reasons for achieving. This is different than memorization for test taking, where the pupil regurgitates subject matter. Purpose for learning goes more in the direction of the learner sensing that content/skills are relevant in school and in society. It is the pupil who needs to achieve objectives of instruction with the intent of using what is being acquired in ensuing situations. Relevance is then stressed in the curriculum

* the interests of learners must be gained in order to achieve more optimum attainment. These must not be disconnected from ongoing activities, but must be evidently jointed with active involvement. Interest provides for effort in development, growth and achievement. Effort provides increased energy levels for learning

* meaning in learning is salient. With meaningful content/abilities, pupils understand   what is being focused. Meaningful subject matter/skills have transfer values for new learning experiences. Proper attitudes might result in positive feelings toward learning to accrue

Thus, the supervisor of instruction must be well versed in the psychology of learning and be able to assist teachers in utilization of these inherent principles. When engaging teachers to offer help, the supervisor emphasizes quality human relations and realizes the saliency of transactions may be hindered due to rudeness, being aloof, abrupt and unkind. Assisting teachers in realizing and accepting innovative ideas, involves an inward desire in making changes. These cannot be forced nor accepted through authoritarian methods. Good communication involves stressing accuracy and rational thought on the supervisor's role in guiding teachers to move from traditional procedures to what is new, novel and inviting. This is a complex task when teachers hold on to a strong traditionalist point of view, but supervisor's persistence and perseverance might well make for change in a desirable way. When modifications do occur, it becomes rewarding to both teachers and the supervisor of the curriculum. The consequences of changes made should increase achievement and satisfaction in the classroom, for pupils.

Supervisors need to know teachers as individuals and not as impersonal beings. Thus, the supervisor shares, not only the best ideas in teaching and learning but also his/her interests, hobbies and goals in life. Personal relationship must improve to make a desirable school culture of learning.

This might also open the doors for classroom teachers to share what is salient in their personal lives. Communication needs to be open for free flow of ideas in curriculum improvement. This is also important from the point of view of school, pupil and parent relationships. It is poignant for teachers to visit homes of pupils and notice the home setting and domestic environment. Good human relations are of utmost importance in these situations. Thus, teachers need to learn more about the pupils they teach and involve parents in the education process of their offspring. How parents can help children to love school and learning is of utmost importance. For example, much remains for parents to offer to assist pupils in different curriculum areas such as:

* reading aloud to young children and discussing illustrations in the books, with them; pointing to words when they are read, aids the child to identify abstract words in the passage / sentence

* taking pupils on excursions to nearby places and discuss their impressions and gain

* assisting pupils in naming objects when going to a place of interest, such as a supermarket; continuous growth of vocabulary is of paramount importance

* doing simple science experiments with children; let the child identify the problem, develop a hypothesis and draw a conclusion

• listening and discussing news items at the child's level of understanding

• writing a friendly letter, cooperatively, with the child; brief discussion on each important part of the letter

* playing listening games in the home setting (Ediger, 2007)

Parent/teacher conferences provide excellent opportunity for mixing and communication among them. They create good will and co-operation. Work output of the pupil should be available to evaluate the present status of the child's achievement as well as to discuss future goals to attain. There are a plethora of things to elaborate upon in parent/teacher conferences, like academic problems faced by a pupil (say, in reducing fractions), along with general ones (like, citizenship behaviour, art of group work and team work, proper and timely decision making, anger management, etc.). Notes may be jotted down and utilized for the next conference in effecting and observing changes in the child's behaviour. Communicating regularly with parents is salient and may also be done through the following approaches:

* e-mail messages in reporting continual progress

* letters mailed through snail mail

* brief conferences by means of mobile or landline phones

* parent/teacher organization meetings

* school night where teachers are introduced by the principal to parents in a large group session with ample opportunities later to meet the child's teacher

Collaborative endeavours are salient for pupils to assist in meeting the goal of getting along well with others. This is important now as well as in future workplaces. Teachers need to place learners in a committee setting which fosters good human relations. Where antagonism is in evidence, changes in committee membership must be made so that cultivation of quality attitudes would persist and grow.

Where antagonism is in evidence, changes in committee membership must be made so that cultivation of quality attitudes would persist and grow. As pupils grow in improved human relations, a more heterogeneous group may be formed to achieve goals in the curriculum. Four to five members in a small group makes it possible for all to contribute frequently. The teacher must be a model for pupil's observation of good human relationship and its relevance. Thus, learners need to respect others' thinking and ideas; circulate them within the small group behaving and contributing to be polite and able to reduce or eliminate rudeness, and thus achieve the goal of human resource development and attainment of desired objectives.

Teachers also need to work in collaborative endeavours in developing new curricula or modify the existing ones. The supervisor too must be involved in in-service education. They should follow the important criteria:

* staying on the topic

* clarifying ideas presented, when needed

* avoiding interruption to others, during discussions

* emphasizing quality, sequence and coherence

* presenting cogent ideas

* developing and utilizing relevant criteria to assess achievement

A variety of procedures need to be used to evaluate pupil's achievement. Mandated valid and reliable standardized tests are one approach. However, teachers should not drill learners for the purpose of ranking high on these tests. Rather, quality principles of teaching must also be emphasized in the instructional arena. Drill and rote learning only help temporary memorization, which is not conducive to developing good attitudes toward each academic discipline, nor does it help in retention of subject matter.

Standardized test results must be utilized with other methods of assessment such as teacher evaluation of everyday achievement of pupils. What pupils do every day in each lesson needs to be appraised? Thus, attitudes, work and study habits, citizenship behaviour and pupil's empathy must also be assessed. Anecdotal records must be kept by the teacher for each pupil in the ongoing curriculum.

The role of the curriculum supervisor is changing rapidly and modifications in teaching and learning situations need to be made. However, changes should not be made only for the sake of doing so, but to emphasize improved objectives, learning activities and evaluation procedures. Each child deserves the best in education to be ready for career and higher education. At the same time, learners need to enjoy learning as well as meeting the basic needs of nutrition, sleep and rest, proper clothing and safe shelter. A feeling of belonging and importance in the society and an urge for recognition of capability, merit and values must be stressed.

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Vetri Education: Quarterly Journal in Education (ISSN-0973-8614)

Articles of Volume I -VII; 2006-2012 (Title and Author)

Volume 1, No. 1 (July – September, 2006)

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