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DAYANANDA KEPPETIGODA**



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The Editor will be happy to receive a feedback on papers published in the Journal, whether favorable or unfavorable. All correspondence should be addressed to Editor, Sri Lankan Journal of Education Research, Department of Research and Development National Institute of Education, Maharagama, Sri Lanka, Email- dkeppetigoda@gmail.com

SRI LANAKAN JOURNAL OF EDUCATIONAL RESEARCH

Educational research has been used as a scientific endeavour to solve educational problems. This Journal promotes educational research and disseminates research knowledge to enable educationists to take informed decisions towards improving the quality of education

Its aims are

1. to promote and encourage original critical investigation of issues relevant to educational development in Sri Lanka;
2. to disseminate research findings to educational policy makers; planners and practitioners within Sri Lanka as well as internationally;
3. to provide a forum for the interaction of ideas and discussion of research findings.

The Journal contains articles which are the products of educational research based on issues and problems related to the educational system in Sri Lanka.

Notes for Contributors

1. Papers prepared in English, Sinhala or Tamil on research undertaken in education are considered for publication.
2. Papers should normally be between 2,000 – 10,000 words and be submitted with an abstract of not more than 200 words. Short articles on current research are also considered for publication as Research Notes.
3. Manuscripts must be sent in duplicate typed double spaced on A4 paper, on one side of the sheet only.
4. To ensure anonymity, only the title should appear on the manuscript. Attach a cover page with title, name and affiliation.
5. Manuscripts are accepted for publication, subject to non – substantive editing with the understanding that the Journal has the right of first publication.

Study of Causes of Ineffectiveness in the Use of Computer Based Presentations

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ABSTRACT *The use of Computer hardware and Software for computer based presentations is gaining prominence today. Presentation software provides users with a repertoire of software tools to develop effective and attractive slide shows. Numerous observations made by the researcher in a number of different contexts of communication have indicated that most presenters seem to know only how to use presentation software but not how to use them in their presentations for maximum effect. In fact, the secret of the quality of a presentation lies outside such software. Principles, theories and best practices in cognitive science, multimedia theory, human perception, and human behavior form the basis for a successful computer based presentation. In this study, Computer based presentations used in the presentation of research project proposals by adult students on the Teaching English as a Second Language program were analyzed using a rubric for computer based presentation to identify factors that account for lowering of the effectiveness of such presentations.*

Background and introduction to the problem

Computer Based Presentations (CBP) are used in almost all contexts that accommodate a presenter and an audience. (Gurrie et al 2008). Numerous such instances can be drawn from fields like trading, research, education, projects etc. Over time, people drawn from such audiences started to have doubts about the efficacy of the use of presentation software as a presentation aid. Some have even wanted to compare the almost forgotten overhead projectors with, CBP.

2. *K.G. S. K. Perera,*

The researcher has personal experience of audience of CBP software shows on numerous occasions where the same question had been raised. The presenter was either using CBP as a convenient way to escape responsibility of carrying content in memory or was more interested in the fancy features of tool of software for CBP rather than concentrate on the needs of the audience. On certain occasions a successful presentation was made but underutilization of software tools or display of poor connection between the presenter and the slides of the CBP were evident. This state of affairs has led the researcher to investigate the problem of abuse and misuse of multimedia and CBP Software in the design and development of CBP

Objectives

The objectives of this study were to discover the factors negatively affecting the design of effective CBP and to suggest possible solutions that would lead to the elimination of most common mistakes made in the development of CBP

Conceptual framework

Communication is a very important aspect of human life. It has a very long history dating back to the prehistoric era. The importance of communication in human affairs was recognized at the dawn of scholarly inquiry, when Plato, Aristotle, and Socrates undertook major studies on its role in politics, the courts, and epistemology. However, communication is a difficult term to define. According to Berelson and Steiner (1964) “Communication is the transmission of information, idea, emotion, skills, etc., by the use of symbols-words, pictures, figures, graphs, etc. It is the act or process of transmission that is usually called communication.” From the point view of the purpose, communication is to express oneself in such a way that one is readily and clearly understood by the use of speech, signals or writing. (Schwartz, 2008).

The system of communication has the following components: sender, information source, message encoder, transmission medium, receiver, and message decoder (Chandler, 1994). Communication is not, in fact, a neutral act of moving content from one person to another, but a complex transaction influenced by numerous factors. People use messages to inform, persuade,

manage, relate, and influence one another in various contexts and cultures, using a variety of channels and media. Communication is effected in terms of messages. According to how people react to your message, they (the people) can be divided into 4 categories. Each category can be called a separate audience, which needs special approach. It may always happen that a person can be included in two or more audiences simultaneously, depending on their mood, time of the day, etc. (a) Identifiers need only to take a quick look at a message (b) Skimmers want to process a message as fast as possible (c) Readers tend to process parts of a message at random and decide either to continue with or discard the message (d) Desk readers are more likely to process the entire message. (E-mail marketing, 2007). Although to initiate communication and to ensure effective communication, psychological and sociological factors (e.g., personality, goals, social skills, contextual and relational norms) are required and the influences of these factors are frequently less important in comparison to actual communication dynamics. As such, once people commence interaction, for example, cognitive factors are likely to apply their strongest influence at the early stages of the process but fades out in importance as the interaction proceeds, as communicators adjust to the level of the audience. Thus, encoding information into messages is essential to understanding the consequences of human interaction and the relationship between what precedes and what follows from it. (National Communication Association, 2008).

Presentation is one form of communication that fulfils the characteristics of communication described in the first and second paragraphs under the title “Conceptual Framework”. Methods and formats of presentation mainly differ according to the purpose thereof, such as sales promotion, project proposals, project progress, research proposals and final research presentations, educational presentations etc. In this case the sender is the presenter and receiver is the audience. Usually these two parties meet face to face when the presentation takes place.

The comprehension of messages being passed in a presentation is shared between the sender (presenter) and the receiver (audience) in varying proportions. It is the duty of the presenter to evaluate the audience perception of the material presented (Gurrie et al. 2008) In a case where comprehension of the message by the audience is essential for the benefit of the presenter 100% responsibility may be assumed to lie with the presenter. Presentation of a project or research proposal

in an academic context, is one of such situation. It is not safe to assume that the audience in this connection is with all open senses to grasp the message of the presenter. Ultimately their judgment determines the future of the presenter's work. Therefore it is imperative that coherence of the presentation be ensured by the presenter him/herself.

With the advancement of technologies such as the printing press, the telephone, television, and information and communication technology (ICT), several dimensions have been added to the format and mode of communication. Integration of multimedia, ease of interactivity with the content presented, low cost of production, modifiability, reusability of material, are some of them. ICT has provided presenters with a repertoire of tools. In the 1980's software was available to create computer based slides and transparencies. With the advent of computer operating systems, with Graphical user Interface (GUI) software companies began to develop very user-friendly CBP software as alternative to older software. Some software producers included CBP software in their office software suites, and this gained popularity among all those who used operating systems with GUI users. It was a wonderful solution in search of a problem. Most CBP Software had a repertoire of tools that made creation of CBP possible in a very short time, compared to previous software used, (Kaminski, 2001) Since of late Open Source software like Open Office Impress, which is very much similar in appearance, features, and functionality to commercial CBP software, running on Linux operating system is gaining popularity.

The use of multimedia has made presentations very effective. Although multimedia have different meanings in different contexts it basically involves the use of visual and auditory media simultaneously to communicate. In other words, it is the combined use of words and pictures to pass messages. Words can be on screen (written) or spoken and pictures are either static or dynamic. Dynamic pictures change with time, for example video or animations. (Mayer, 2002) A picture can encapsulate many aspects of an entity and therefore is very effective in passing messages, leading to the anecdote that a picture is worth of 1000 words. Time allocation for a presentation of research proposals is strictly limited and therefore, the presenter has to make the maximum use of time. As such the correct and appropriate combination of multimedia in correct proportion is vital in this process in order to make a success of his/her presentation.

Presentations have to be well organized in advance and formatively evaluated prior to the actual exercise. This practice helps the presenter to avoid possible but unexpected mishaps in the real setting. Very careful attention has to be given in the preparation of CBP that involve individual slides or frames. The content of the presentation is structured and spread over the slides. The messages, or the parts of contents in each slide, need to be coded with multimedia for enhanced effect.

Mayer's (2002) theory of Cognitive Theory of Multimedia Learning forms a coherent basis for the use of multimedia in message passing. According to his theory, multimedia messages are composed of words and pictures; words are seen or heard and pictures are only seen. According to his theory, human beings use two separate channels (dual channel) to receive and process multimedia messages: one for pictures or written words called visual channel and the other called auditory channel for words heard. Therefore the same message can be coded using words and pictures to increase the power of memorization (Mayer, 2002. Paivo, 1986) and improve the aesthetic quality of the message to increase motivation in learning (Keller, 1992).

The words heard are processed via the auditory channel. The words or pictures seen are processed via the visual channel. In the working memory the pictures seen are formed into an image base and words heard into a sound base. Finally, these two bases are integrated using relevant prior knowledge, if available, of the current content being studied and stored in the long term memory (Mayer, 2002).

According to Mayer (2002), all the messages to which a person is exposed are not captured by the sensory memory and only parts that gained attention are. Therefore, to motivate the receiver to capture them, techniques such as perceptual arousal, inquiry arousal, and variability (Keller, 1992) should be used. On the other hand, the capacities of the visual and the auditory channels are limited (Mayer, 2002) and it is dependent on individuals. Any attempt to overload them by releasing too many messages per unit time can cause cognitive overload and may reduce the efficiency of the process (Sweller, 1999).

For a better multimedia effect, text need to be complemented with pictures and they should be spatially and temporally contiguous (Mayer,2002). This also avoids split attention leading to cognitive overload (Sweller, 1999). Dynamic pictures may be supported with narrated text but not to be complemented or supplemented with on screen text as this is going to overload the visual channel which is limited in capacity. Another matter that has to be avoided in the coding of messages with multimedia is unnecessary redundancy (Mayer, 2002). This means that the same information is repeated as dynamic pictures and text which prompts the recipient to concentrate on both simultaneously, eventually causing cognitive overloads (Mayer, 2002. Sweller, 1999). On the other hand, inclusion of irrelevant pictures in message frames may confuse the recipients of multimedia messages (Mayer, 2002; Bartsch & Cobern, 2003). Further Mayer (2002) has posited that certain visuals are only effective with individuals with high spatial abilities.

Apart from the use of multimedia there are other considerations in the creation of CBP. The content must be properly distributed over the slides with equal weight apiece. The first slide of the presentation could be the introductory slide carrying title, presenter's name, institution, and e-mail address etc. The next slide can be arranged as the content page with hyperlinks to relevant starting slides for each topic in the content page. Placement of a link to the content page is useful to meet certain display demands of the content by the audience (Banuazizi, 2008; Finkelstein, 2004). A slide may not contain content that needs the presenter to stay more than two to five (depending on the duration of the whole presentation) minutes before moving on to the next slide (Clark, 2002). Overstay with a slide may tend to fading of the attention grabbing effect of a slide. According to "Kawasaki's Rule of 10" by Guy Kawasaki - former Apple Computer's "chief evangelist", CBP should not last more than 20 minutes. His usual 10 slides are generally limited to a single sentence or phrase and a supporting image per slide. The 10 slides give the audience powerful visual cues that reinforce the message that Kawasaki was communicating. The text or words in slides should only provide guidance to the presenter, not that the presenter is supposed to display the words he is supposed to speak to the audience. (Roos,2008). Therefore, a slide of CBP may contain only the main or sub-topics as guidance to be discussed but not the paragraph of text to be read off the slide.

A slide should not be overloaded with several concepts as it requires the presenter to stay a longer time with a single slide. Further it may demand inclusion of too many sublevels of hierarchical organization of content leading to confusion of the audience (Tufte, 2005). The layout of a slide plays an important part in conveying messages. The text and pictures should be properly balanced and aligned allowing pictures not to overshadow the text and also to ensure that they are combined to carry meaning. The other important factor that improves clarity of a slide is allocation of white space. Adequate white space prevents slides from getting littered, cramped and confusing. (Graphic design definition, 2007)

Another important matter is the use of appropriate text fonts. They should be big and clear enough for the audience to see the presented text. According to the “Golden Rule” the lines of text displayed at a time should be within five and nine for the ease of visual capture by an individual, but in the case of CBP slides, generally, it is three lines per slide and six words per line. According to Adler & Elmhorst (2005) as cited by Gurrie et. al (2008) a slide should consist of seven lines with no more than seven items per Line, Loading slides with too much contents makes audience concentrate more on the slides but not what the presenter explains. (Kaminski ,2001). Depending on the situation, like presentation of project proposal allowances may be made to apply the “Golden Rule”. For clarity, text is displayed as numbered or bulleted lines as opposed to paragraphs. If statistical figures need to be presented, tables or graphs are the most suitable for clarity. Use of colors and styles in text should always carry a meaning. Preferably, the size of the main heading is size 30-40, and sub-heading is size 20-30. Use of more than 2 or 3 typefaces in a presentation is not recommended and the use of all capital text and titles in title case make reading uncomfortable. It is better to use italics instead of underlining. More than three to four colors may not be used and colors are basically used to highlight specific items and to grab attention. Color combinations like green/red are not suitable as these are the colors most confused by those with color blindness. If a slide contains several sub topics to be described, those that have been dealt with could be displayed in a faded color. This places the audience in the total picture and set their focus on the current sub-topic. (Purrington, 2007).

The background of a slide also plays an important part. In a very dark room a light foreground color on a dark background color is suitable and the other way round is for an audience in a dimly or very much lit room. Although the

shaded background is aesthetically appealing, a plain background is always preferable as viewers feel comfortable with the latter. If a picture needs to be included in the background it has to be very faded and should not interact with the main content of the slide. Video projectors some times may not project slides an exactly as they appear on computer monitors exactly as they appear on computer monitors. Certain fonts may not look nice and certain colors may be shown differently. Hence it is advisable to try out presentations in advance with a video projector. (Purrington, 2007. Clark,2002)

The use of pictures in slides improves the effectiveness of a presentation by enhancing ease of communication, elevating the audience's perceptions of the presenter, and improvement of the speaker's confidence. The Minnesota/3M study concludes that an audience is 43% more likely to act on a speaker's message if he or she uses visual aids. CBP on the other hand, is most effective when the messages are passed more visually than verbally (Kaminski, 2001), but these pictures should comply with Mayer's (2002) principles of multimedia learning. For best effects, pictures should be presented, first and followed by text (Kaminski, 2001).

Animation in slides either as transitions of slides or movements of elements of a slide, is an attention grabbing tactic that helps to break the monotony of a presentation. It further indicates that the slide has changed, but animations should not be needlessly cute or fancy as it make the audience, particularly those of authority, feel embarrassed. Use of fading in slide transition is not comfortable to some viewers. Therefore the use of a simple transition like wipe-left is desirable. Animations like word by word, or to be worse, letter by letter are not only boring but they may irritate the audience as well. Care must be taken to avoid continuous flashing of items on a slide since it also distracts the audience (Purrington, 2007).

Use of sound in presentations must be used only if it is absolutely necessary. Extreme care must be taken not to make the presentation look funny and irritate the audience when slides are to be associated with sounds.

As discussed above an electronic presentation has two basic aspects: organization of content and coding of content in terms of multimedia. The facets of organization of content are Introduction, sequencing of content in terms of frames and writing mechanics. Use of multimedia with appropriate use of words and pictures to enhance the clarity and power of delivery of content (Vandervelde, 2008). Therefore, both these aspects are equally important to decide the effectiveness of a presentation.

Methodology

The subjects selected in this study were 52 students on the program “Diploma in Teaching English as a Second Language” of one year in duration, conducted by the Department of English, National Institute of Education, Maharagama. The academic period was 2007/2008.

The students were teachers of English holding a diploma in teaching obtained from Teachers Training Colleges. Their age ranged from 30 to 45 years and comprised 10 males and 42 females. Only 42% of them had acquired basic ICT skills, including CBP software before enrolment on the program. Under the subject titled Educational Technology in their current program of study, they had learned CBP software before they had prepared CBP for their presentations. The duration of the CBP component was four hours of hands on training.

One component of this program was titled Small Scale Research Project. Students were required to make presentations of their project proposals using CBP. The time allowed for a presentation was 20 minutes. All 52 presentations were collected after the presentation for analysis. To arrive at a figure to measure the effectiveness of a presentation an instrument was developed based on the matters discussed in the conceptual framework of this study. The instrument was a modification of the rubric developed by Vandervelde (2008). A weighted marking scheme was adopted in order to highlight aspects of higher significance as contribution of each aspect towards an effective presentation was not equal in strength. The use of sounds in slides was disregarded in the evaluation process as presenters were not provided with loud speakers in the course of their presentations.

The frequency distribution in terms of the rubric categories for each aspect under the study was prepared to identify the problematic areas in the use of CBP. Further, each slide show was awarded a final score according to the points given in the rubric. The mean and the standard deviation of those scores were also calculated.

The mean combined effect (CE) of slides was measured as a combination of the content distribution over the slides and the effective use of multimedia

C = mean value of C_1, C_2, C_3, C_4 Values of all Slides.

P = mean value of $P_1, P_2, P_3, P_4, P_5, P_6, P_7$ Values of all Slides.

Formula for the calculation of CE was $CE = (\frac{1}{2}) [C + P]$.

$\frac{1}{2}$ is used to convert CE to a scale 0 - 100 and C+P is taken as C and P contribute equally to an effective presentation.

The following instrument was used to evaluate each slide show.

Table 1 : CBP. Rubric

Feature	Exemplary	Proficient	Partially Proficient	Incomplete
Introduction (C1)	3 points The introduction is clear, coherent and presents the overall topic and draws the audience attention.	2 points The introduction is clear and coherent and relates to the topic.	1 point introduction shows some structure but does not create a strong sense of what is to follow.	0 points The introduction does not orient the audience to what will follow.
Content (C2)	8 points The content is written clearly and concisely with a logical progression of ideas and supporting information with one Concept per slide	6 points The content is written with a logical progression of ideas and supporting information with two per slide on more than two slides	4 points The content is vague in conveying a point of view and does not Create a strong sense of in purpose with more than two concepts per slide on more than two slides	0 points The content lacks a clear point of view and logical sequence of information.

Loading of Slides (C₃)	8 points More than 75% Slides contain only 9-5 lines of text per slide	6 points 75% - 60 % slides contain Only 9- 5 lines of text per slide.	2 points 59% -25% Slides contain only 9 - 5 lines of text per slide.	0 points Less than 25% slides contain 9-5 lines of text per slide.
Writing Mechanics (C₄)	6 points More than 75% slides have text written with no errors in grammar, capitlization, spelling.	4 points 75%-60% slides have text written With no errors in grammar, capitalization. spelling,	2 points 59%-60% slides have text written with no errors in grammar capitalization, and spelling,	0 points Less than 25% slides have text written with no errorsin grammar punctuation, and spelling
Text Elements: Fonts Size (P₁)	5 points More than 75% slides have heading 30 - 40 in size and subheadings 20-40 in size	3 points 75%-60% slides have heading that are 30 - 40 in size and subheadings 20-24 in size.	1 points 59% - 25% have headings that are 30 - 40 in size subheadings 20-40 in size.	0 points Less than 25% slides havd headings that are 30-40 in size subheadings20-24 in size
Text Elements: Colours & Style (P₂)	5 points More than 75% slides use italics or bold or colours and indentations to enhance readability.	3 points 75% - 60% slides use italics or bold or colours and indentations to enhance readability.	1 points 59% - 25% slides italics or bold or colours and indentatons to enhance readability	0 points Less than 25% slides use italics bold or colours and indentations to enhance readability
Background Colours & images: (P₃)	5 points More than 75% slides use background colours to enhance but not to distract the readability of text.	3 points 75% - 60% slides use background colours to enhance but not to distract the readability of text.	2 points 59% - 25% slide use background colours to enhance but not to distract the readability of text.	0 points Less than 25% slides have background colours to enhance but not to distract the readability of text
Background Colours & images: (P_{3,2})	5 points More than 75% slides use background images to enhance but not to distract the readability of text	3 points 75% - 60% slides use background images to enhance but not to distract the readability of text	2 points 59% - 25% slide use background images to enhance but not to distract the readability of text	0 points Less than 25% slides have background image to enhance but not to distract the readability of text.

Layout: (P4)	3 points More than 75% slides use layouts that are visually pleasing and contributes to the overall message with appropriate placement of components and white space.	2 points 75%-60% slides use layouts that are visually pleasing and contributes to the overall message with appropriate placement of components and white space.	1 points 59%-25% slides use layouts that are visually pleasing and contributes to the overall message with appropriate placement of components and white space.	0 points Less than 25% slides use layouts that are visually pleasing and contributes to the overall message with appropriate placement of components and white space.
Graphics (P5)	3 points More than 75% Slides have graphics that assist in presenting an over all theme and enhance understanding of concept, ideas and relationships.	2 points 75%-60% slides have graphics that assist presenting an overall there and enhance understanding of concept, ideas and relationships	1 points 59%-25% slides have graphics that assist in presenting theme and enhance understanding of concept, ideas and relationships	0 points Less than 25% slides have graphics that assist in presenting an overall them and enhance understanding of concept, ideas and relationships
Animation: Screen transitions (P₆)	5 points More than 75% Slides have screen transitions that are quite appropriate to motivate the audience	3 points 75%-60% slides have graphics transitions that are appropriate to motivate the audience	1 points 59%-25% slides have graphics transitions that are appropriate to motivate the audience	0 points Less than 25% slides have screen transitions that are appropriate to motivate the audience
Animation : On Screen Object an animation (P₇)	5 points Move than 75%. slides have object transitions that are quite appropriate to motivate the audience	3 points 75% - 60% Slides have object that are quite appropriate to motivate audience	1 point 59% - 25% Slides use, object transitions that are appropriate to motivate the audience	o point less than 25% Slides use object transitions that are quite appropriate to motivate the audience

The weights given for each category were as per the original tool by Vandervelde (2008) except for text elements (5 as against 3). Use of graphics (5 as against 3) and for animation (5 as against 3). Higher Weights were given in order to highlight the negative effect that could be brought about by the misuse of Such elements. Use of pictures was broken down as pictures in the background of a slide and as main components of a slide. Animation was also separated into slide animation and animation of objects on a slide. According to the rubric the maximum score that presentation can score was 61. In calculations scores awarded to the presentations were mapped on to a (0 - 100) scale.

Results

The data collected according to the rubric are tabulated as follows.

table 2: Results: Percentage number of slide shows that used the features above

Feature	exemplary %	proficient%	proficient %	Incomplete%
Introduction(C1)	18	78	4	0
Content organization (C2)	2	96	2	0
Loading of slides (C3)	20	38	40	2
Writing Mechanics	100	0	0	0
Text element font sizes (CP ₁)	96	2	2	0
Text elements Colours & style (P2)	22	16	4	58
Background colours (P3)	22	30	6	42
Background images (P3_2)	0	0	0	100
Layout(P4)	6	36	50	8
Graphics(P5)	0	0	2	98
Animations: Screen transitions (P6)	8	8	4	80
Animation: On screen object animation (P7)	4	8	6	82

The mean number of slides per slide show was 11.86 with standard deviation of 2.32. The mode of the number of slides per show was 11. Further, 54% of the shows had (10 - 12) slides, 30% of the shows had 13 - 16 slides, 10% had (7 - 9) slides and 2% had 19 slides per show.

The contribution to combined effect (CE) from C was 77.52% with standard deviation of 9.21 and the contribution to combined effect (CE) from P was 39.48% with standard deviation of 14.57. CE was 58.5%.

Analysis of results and conclusions

As evidenced by the mean, standard deviation, and the mode of slides per slide show, presenters had created the right number of slides per show that allowed them to stay roughly a maximum of two minutes per slide in the presentation. This is an effective design. Only one slide show had gone to an extreme by making 19 slides.

In terms of organization of content (78%), reaching proficient level) creation of introductory slides(96% reaching proficient level), and writing mechanics (100% reaching proficient level) the presentations had reached the proficient level. Although these three features are not directly connected to the use of CBP tools, they are essential in making an effective presentation to ensure that the audience have clearly understood the project proposal. The most outstanding feature of these slideshows, as evidenced by 96% becoming exemplary, was the use of the right font sizes and styles to improve the clarity of presented material. The use of font colours, boldfacing or italics to improve the appearance and thereby highlighting the main points was not satisfactory with 58% slideshows being rendered incomplete in this respect.

Only 52% of the slides shows managed to top the proficient level in the use of background colour with 42% using either no colours or inappropriate colours. None of them used images in the background of slides. In fact such images are not suitable for slides used in presentation of project proposals of this kind and the presenters seemed to have realized this. Hence the calculation of Peffect, this feature was not considered. The layout design of slides in terms of placement of objects and provision of white space (areas with no content) was not satisfactory with only 36% shows at proficient level and only 6% being

exemplary. The use of graphics was only 2% of the presentations and in fact with pictures (this includes diagrams as well) presentations could have been made more attractive and effective in the delivery of information.

Use of slide transitions was very poorly done as indicated by 80% incomplete level. Some of them had used transitions that were inappropriate for this kind of presentations. Custom animation or the animation of component was also not popular as evidenced by 82% incomplete level. Component animation in some of the slides was quite disturbing and distracting to the kind of audience in this case.

In terms of distribution of content over slides, effectiveness of the presenters' slide shows was satisfactory (mean 77) and fairly consistent (standard deviation 9.21) whereas that value in terms of the use of CBP tools was very low (mean 39.48) and rather inconsistent (standard deviation 14.57). Due to the low value of P the mean combined effect was 56.46 with standard deviation 9.97.

The analysis of the above results indicates that the presenters in this study had been effective in the organization of the content on slides in terms of maintaining a logical flow of concisely stated content, and use of correct language. The use of right fonts sizes are the only C.B.P tool the presenters had used to the maximum effect (96%) in contrast to the use of rest of the tools considered in the study.

Discussion

Although CBP has a repertoire of tools only the right use of them at right places will ensure an effective presentation. CBP Software users should always be mindful of the nature of the presentation and the type of the audience when they design and develop slide shows. The use of colour and animations should be used with great care as these features can harm a slide show that is otherwise effective. The audience may find screen transitions like wipe-right and text animations like wipe-left comfortable as these animations are compatible with natural turnover of pages of a book and the way people read text respectively. The other type of animations may be suitable for objects like images. Learning to use CBP Software should not be limited to the practice of tools therein, but principles and best practices of using them as well. Fair knowledge about cognitive aspects of multimedia, human perception, knowledge of contrast of colour, and

cognitive psychology are some other important considerations in the design and development of CBP slides shows for presentation purposes. Finally, it is important to note that CBP should be used as a guide but not as a crutch.

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New guidelines for secondary school curriculum in Sri Lanka

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ABSTRACT *The main purpose of this study is to develop new guidelines for the secondary school curriculum in Sri Lanka. The decision on developing the new guidelines for secondary school curriculum was to fulfil the real needs of the students and the nation. To achieve this purpose of the study, three steps of data collection had been undertaken. As the first step 200 expert teachers from eight provinces are taken as a random sample of this study to identify the discrepancies between the present needs and the future needs of the secondary school curriculum. Data obtained in this sample is analyzed to develop new guidelines for the secondary school curriculum in Sri Lanka. In the second step 20 curriculum experts are interviewed to help develop a questionnaire for Delphi techniques which were employed in this study to achieve consensus among the experts regarding the new proposed guidelines. The research results were as follows: The recommended new guidelines to the planned curriculum had been accepted by the entire chosen group in the sample; in both rounds of the Delphi technique more than ninety percent of the statements have achieved the experts' consensus on new guidelines for planning the secondary school curriculum; the goals of the present and the future secondary school curriculum were consistent with needs and capabilities of students; the content in the current curriculum was moderate and there is a need to improve the new structure in order to meet the students' needs and national goals; future development in the common curriculum should also provide knowledge in solving students' current social problems. Findings of this study also recommend that the*

new guidelines under this study for all secondary schools student in Sri Lanka are in the right path to develop their knowledge, skills attitude and capabilities to face future challenges. The guidelines suggested for the new curriculum will give students a sound system of values, and skills needed for employment and occupational activities, and the ability to solve problems of daily life. The various skills scheduled for incorporation in the new guidelines will enrich their development as full-fledged citizen who can be the leaders of the new generation.

Background

In Sri Lanka, curriculum is a written document which includes strategies to achieve the desired educational goals of the country. Accordingly, curriculum consists of on going experiences of children under the guidance of the schools. It represents a special environment for children in achieving self-realisation through active participation within the school. But curriculum is also a field of study made up of research, theory and principle.

This paper presents the results of a study designed to develop guidelines for an innovative curriculum for Secondary Schools in Sri Lanka based on needs survey Delphi technique conducted among a cross section of expert teachers and curriculum experts. The end result of the analysis reveals the new guidelines for the secondary school curriculum.

It is a well-known fact that a curriculum is not implemented according to intent in many countries and this is true even in Sri Lanka. We live in a constantly changing world. In fact change is one of the most striking characteristics of the universe we live in today. Therefore, the challenge that we have to face is to learn to survive in a changing environment. Thus, in the educational field, modifications are needed to keep up with political, socio-economic, cultural and technological developments. Changes or substitutions are constantly taking place in classrooms, teachers' rooms, at district, provincial, and national levels. Education is the stepping stone preparing students to face the impending global development. Curriculum is that which we design to meet these challenges; one that is adjustable, depending on the changing conditions in the world. Thus curriculum is not static; instead it should be a dynamic field in which changes could occur and could be developed and implemented without taxing the educational system. In other words it is a

laissez faire curriculum or a written curriculum with a number of options to suit the divisiveness in the country, a flexible curriculum which will lend itself to change and adaptation in a fast - changing world.

Curricular changes elicit other changes; Fullan and Pomfret (1977) identified changes in material, structure, role behaviour, knowledge, understanding and value, as some of the obvious changes involved in education and its implementation. These changes bring about a host of problems and challenges that have to be handled effectively. Failure to do so would render a curriculum change ineffective and cause much wastage. A developing country like Sri Lanka can ill-afford this wastage.

An environmental barrier or developmental factor can lead a country to a curriculum change. There is no doubt that any child, whether able or disabled (with special needs), has to go to school. In the past, education was an exclusive luxury. It is only through a revolutionary change that education become available to all. Nevertheless, the impact of modernization has caused great changes in the goals and contents of education in order to meet the demands of development. Curriculum issues have created interest and provoked debate among educators, specialists, researchers, administrators, policy makers, local education agencies and many others.

‘Change’ has always been a part of the human condition. In fact it is one of the most striking characteristics of the world we live in. New requirements all the time will arise to meet the new demands created. This is on par with the rate or the degree of ‘change’. A knowledge explosion, coupled with rapid advances in science and technology, has contributed significantly to the increasing rate of change being experienced by society. All social institutions, families, schools, government or industrial organisations are affected. Thus schools having their purpose and nature as social institutions are involved and affected by these political, social, cultural and economic changes. These would act as a stimulus or ‘disturbance’. These changes help to elicit a response within the national education system (Havelock, 1973). The more rapid the change in society, the faster the education system will have to adapt.

In Sri Lanka, for instance, the structure in the field of occupation undergoes many rapid changes. The essential occupational skills vary with each individual.

The country needs an educational system which can create a special workforce trained for the current and future needs with abilities to analyse and reason out and apply knowledge in line with practical problems, such as problem solving technique, knowledge of contemporary social and economic development, leadership, potential ability to work with others as a team, work ethics, knowledge in promoting productivity, creating good discipline and communication skills. Employers should consider that these attributes make graduates easily trainable and facilitate their entry into an efficient and productive workforce (The General Education Reform, 1997)

Secondary education in particular plays a critical role in preparing a large number of young entrants for the labour market. These requirements need to be reflected adequately in the Secondary School Curriculum when making evaluation. In Sri Lanka, for a change in Curriculum the National Institute of Education is responsible for developing curriculum. This was legislated by the act of parliament of the Democratic Socialist Republic of Sri Lanka National Institute of Education Act 28 of 1985 section 3.

Sri Lanka has a population of nearly 20 million, which is increasing at the rate of 1.4% per annum. The country has had an “education for all” policy for more than five decades. As a consequence it has secured a national gain in literacy growth estimated at about 90 percent. This achievement was noted in the Human Development Report (2002) of the United Nations Development Programme. It is remarkable in comparison with other member countries in the region. Since this proves that education is considered as an important basic development factor of our country, the contribution rendered by any institution solely engaged in developing material and manpower to achieve the goal of producing well equipped persons to fulfil the occupational needs of the country is none other than the National Institute of Education (NIE).

Statement of the Problem

Miles (1994) believes that educators frequently forget that curriculum change involves not only the change in the institution but also the change in people as well. A change in people demands not only a change in skills and knowledge but also in beliefs, values and attitudes.

The secondary school curriculum will be revised to improve the quality and effectiveness in teaching in all schools and to incorporate the new component on knowledge, attitudes, skills, capabilities, and values which are necessary for holistic development” (The General Education Reform - 1997 - section2). National Education Commission Report (2004), states that the secondary schools curriculum should be strengthened with all knowledge, attitudes, skills and abilities (p27).

The above statements show that the curriculum development at the national level was unable to meet all the needs of the country, especially the local needs of the students who hold different cultural beliefs. It shows that curriculum guidelines are not strong in providing knowledge, attitude, skills and capabilities in secondary

For curriculum development, the Tyler model is used to formulate goals, contents, structure and capabilities. This explains the learners’ needs and is valuable in helping the curriculum to formulate goals, select content and structure. The model focuses on the fact that learning needs are very important and should be formulated into educational goals. The learner’s needs has to be met with in a way which satisfy the learners, and provide them with knowledge, skills, and attitudes and capabilities related to life situations.

The planning model of Bryson helps as an input to the outcome of the Curriculum development model by Tyler which brings out knowledge, attitude, skill, competency and capability needed for the secondary school learners. We analyze the Bryson planning model and fill the gap with necessary requirements. The ultimate outcome will be the Tyler Curriculum Development Model.

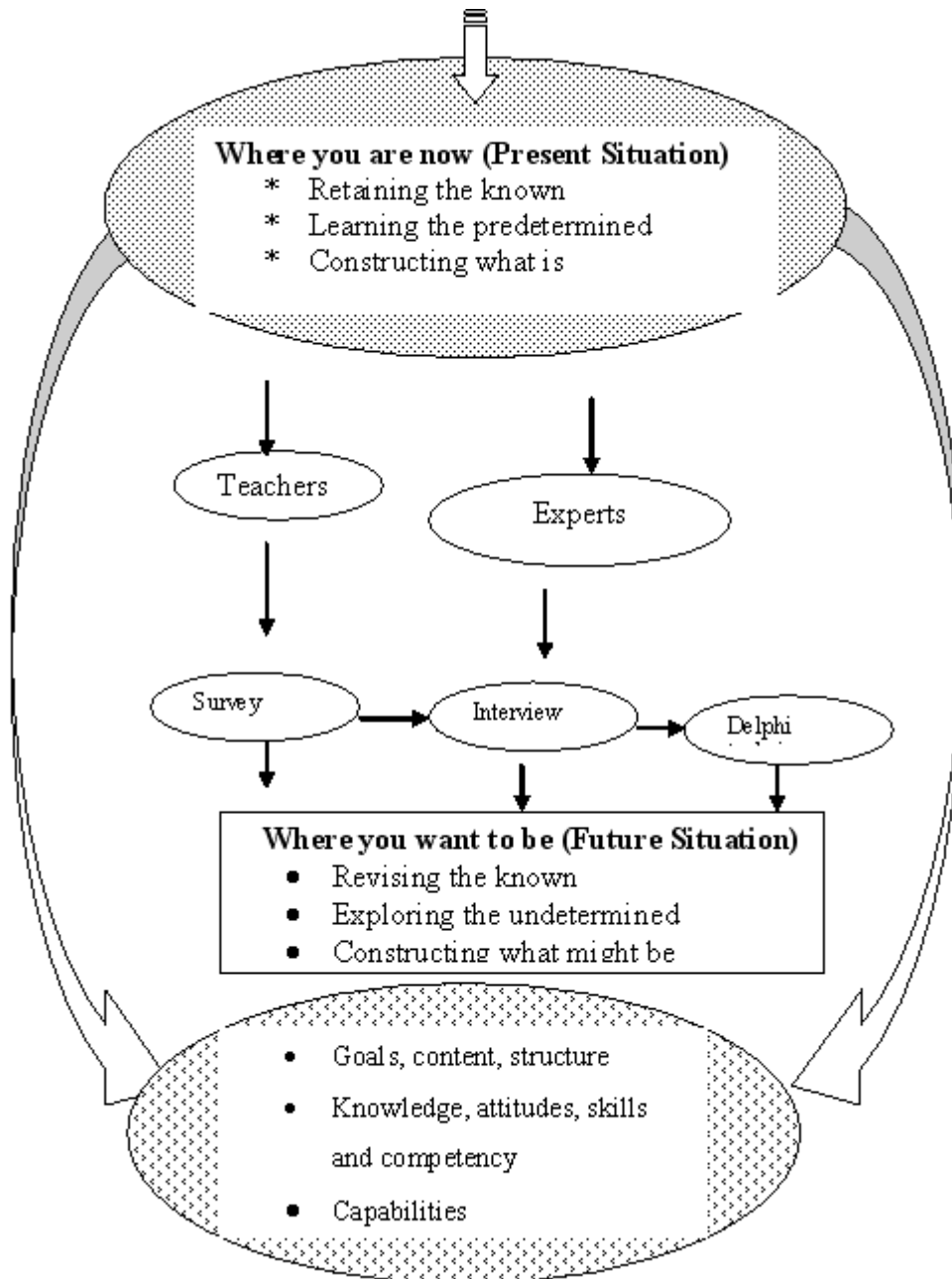


Figure 1 Conceptual framework for the study

Rationale of the Study

Students of secondary schools should be provided with all abilities and skills which are helpful to solve current problems. Therefore, guidelines will provide a much clearer structure on what should be the content, goals and structure in designing a curriculum to fulfil this aim. Guidelines will also provide the framework on how the secondary school curriculum should be designed with all skills, knowledge, attitudes, and capabilities. Furthermore, there is significant importance in developing multi skills for future employment in the country.

The Sri Lankan secondary schools curriculum at present needs proper guidelines followed by the National Institute of Education in developing curriculum materials of secondary schools. Therefore the researcher found that developing guidelines for the secondary school curriculum is of utmost importance and it has become the major concern for this study.

Since the present curriculum gives only subject matter knowledge, it largely neglects to provide all necessary skills that the student needs to live in the globalized and rapidly changing world. Hence the findings as concluded by the researcher for developing guidelines for the secondary school curriculum hold out much promise for curriculum development activities of the National Institute of Education.

Research Questions

The following three research questions were considered in the present Study.

1. What are the discrepancies between present needs and the future needs of the secondary curriculum?
2. How can the discrepancies be minimized in the secondary school curriculum?
3. What guidelines can be developed for the new curriculum in secondary schools?

Methodology

There are two methods used in this study, as follows:

1. Survey for expert teachers
2. Delphi Technique for curriculum experts

Survey Method

The survey method is the first method of this study to identify the opinion of expert teachers who are serving different provinces in the country. The purpose of the survey is to identify their opinion about the discrepancies between the present curriculum and the future curriculum in secondary schools.

Delphi technique

Delphi Technique is the second method used in this study to bring about a consensus among the curriculum experts towards planning new curriculum guidelines for the secondary school curriculum. This involved two rounds to arrive at a consensus. Two sets of questionnaires were distributed in two rounds.

The first round:

Sets of questionnaires were distributed among selected curriculum experts. During the first round they were given open ended questions to test their in-depth knowledge of the curriculum. This questionnaire was designed based on the literature review. The scale is a five point Likert-type scale. In this round each curriculum developer was expected to add any item considered important or delete any items which were considered unimportant. The experts were expected to indicate in their reply to the confirmation letter, together with the attached questionnaires, whether they were willing to participate in this study. An additional information guide was given to each respondent to help in responding to each item.

The second round:

The second round of questionnaires was based on the summary of curriculum experts' responses from the first round. The questionnaires are designed based on a five point scale based on the Likert scale from 5 to 1. The responses of the experts are determined by the descriptive statistical instrument such as mean, mode and inter quartile range.

Sample

The main sample in this study are 200 expert teachers who are currently teaching in various subjects in secondary schools in eight provinces, and 20 curriculum experts involving secondary curriculum development activities in different subject area at the National Institute of Education.

Expert teachers

The sample taken in this study consists of expert teachers who are currently teaching in the secondary school throughout Sri Lanka and who could be considered as implementers of the secondary school curriculum. There are 9571 schools throughout the whole country (Census Report Ministry of Education, 2008). A total random sample of 200 expert teachers were chosen from the population of 2000 expert teachers who are serving in the secondary schools to participate this study. The percentage of the sample is 10% of the population.

Simple random sampling method was used to select expert teachers from 8 provinces to participate in this study. The sample selection was carried out by each provincial Director of Education with coordination of zonal education directors. Each provincial director was responsible for selecting 25 expert teachers from each province from the target group. The sample of 200 expert teachers are representative of the entire population of 2000 secondary school expert teachers.

The sample selection was done by the provincial authorities in order to give an equal opportunity to all teachers from various categories in all provinces, to participate. The distribution of sample is given in Table 1.

Table I: *Distribution of Sample by Province*

Province	Sample
Western province	25
North western province	25
Southern province	25
Uva province	25
Northern province	25
North central province	25
Central province	25
North Eastern province	25
Total	200

Curriculum experts

In phase 2, the data collection procedure is based on a sample of 20 curriculum experts who have expertise in curriculum development working in different subject areas at the National Institute of Education. The experts chosen to participate in this study were assigned using purposive sampling. These persons were purposefully chosen because of their rich understanding of the current situation of the research side (Creswell, 2005). Thus in selecting the respondents the researcher used purposeful sampling procedure. This sampling procedure allows the researcher to choose the participants with rich information. Moreover, purposive sampling procedure applied in the present study was defined based on certain criteria which are considered fulfilling the purpose of this study. The sample selection done by the researcher was based on the various subject curriculum experts by using purposive method from the seven departments at the National Institute of Education as given in Table 2.

Table 2 *Distribution of Curriculum Experts by Major Subject Discipline*

Department	Sample
Mathematics	4
Science	2
IT	2
Social studies	4
Religion	2
Tamil	4
Business Studies	2
Total	20

Instrumentation

In this study various instruments are used in data collection. There are questionnaires including rating scales and interview schedule. The rating scale used in the questionnaire was adapted from a 5 point Likert scale. The instruments used in this step were divided into three categories as follows.

1. Questionnaire for expert teachers
2. Interview schedule for curriculum experts
3. Questionnaire for curriculum experts

Questionnaires for expert teachers:

This questionnaire was divided into two parts:

Part 1: Dealing with personal data of each expert such as his/her qualification, working experience in curriculum planning and development.

Part 2: Requiring participants to give their opinions on the present needs and the future needs of the curriculum and discrepancies between both curriculums.

Questionnaires were mailed to 200 individuals in the selected samples; all were returned. Since the percentage return rate was very high because of the interest of the participants and the motivation of the provincial Directors, no further visits were undertaken by the researcher.

Interview for curriculum experts:

The second data collection procedure was aimed at understanding the response of curriculum experts and their opinions, and to minimize discrepancies between the present needs and future needs of the secondary school curriculum.

The interview is the most common form of data collection used in qualitative studies in education (Merriam, 2001). It is sometimes described as “a conversation with a purpose” (Kahn & Cannell, in Marshall & Rossman, 1995). The Interview is a useful and rapid way of getting large amounts of data. More importantly, it allows the researcher to understand the opinions held by people in the context of the study (Marshall & Rossman, 1995), something which we cannot directly observe with our senses (Patton, 1980). It allows researchers to obtain the participants’ perspectives (Patton, 1990) and understand the phenomenon through their paradigm. Interviews are usually conducted to elicit participants’ thoughts (Marshall & Rossman 1995; Merriam, 2001; Newman & Benz, 1998; Patton, 1980)

The interview is one of the methods of data collection engaged in this study. The interviews were conducted in a very congenial and relaxed manner. The interview schedule would be the same as the criteria given to expert teachers.

Data collection procedure

There are three steps in the data collection procedure.

1. The first step is the field survey which required responses to Research Question 1. The instrument used for this questionnaire was sent to 200 selected school teachers. This step was used to find out the needs of the teachers currently serving the schools and their expectations of the new curriculum.
2. The second step in the interview schedule is for 20 curriculum experts. They were required to answer Research Question 2. The interview was held every fortnight. The main objective of the interview was to identify their opinion on minimal discrepancies between the present and future needs of the secondary school curriculum.

3. The third step was a series of questionnaires, which were distributed by hand to the same selected 20 curriculum experts. They had to answer Research Question 3. The main purpose of applying the Delphi technique was to achieve the most reliable answer from a chosen group of curriculum developers who met the required criteria regarding the guidelines for developing the secondary school curriculum. These questionnaires had two parts and were distributed in two rounds.

Data analysis procedure

Data collected in this study were analyzed according to various methods that can be divided into three stages.

Stage One is to answer research question (1). Data obtained at this stage were analyzed using appropriate descriptive statistics including frequency and percentage. Statistical analysis was carried out based on a statistical computer package (SPSS).

Stage Two is to answer the research question (2). Data obtained at this stage were analyzed using appropriate descriptive statistics including percentage. Statistical analysis was done using a statistical computer package.

Stage Three answers research question (3) on data analysis. This was accomplished by using the Delphi Technique for the purpose of achieving the most reliable consensus of a group of selected experts. To achieve a consensus the SPSS program was selected to determine the consistency of the experts' opinion on the development of the curriculum. Statistics used in this phase are median, mode, inter quartile range, mean and standard deviation.

Data Analysis

Analysis of survey

The purpose of this section is to answer the Research Question No. 1. Under this stage is the analysis of data gathered from the opinions of the expert teachers with regard to present and future needs of the secondary school curriculum.

The answer for Research Question No. 1 “What are the discrepancies between present needs and the future needs of the secondary curriculum?” is depicted in Table 3. This table shows the distribution of perceptions of the respondents towards the current curriculum.

Table 3 : Respondents’ Perception Toward Goals, Content, and Structure of Current Curriculum

Curriculum of secondary education	Present n (%)		
	Highly agree	Moderately Agree	Disagree
6.1. Goals			
	50	100	50
6.1.1 Goals are clear	(25)	(50)	(25)
6.1.2 Consistent with local needs	45 (22.5)	55 (27.5)	100
6.1.3 Consistent with national goals	25 (12.5)	60 (30)	115 (57.5)
6.2. Content	55	50	95
6.2.1 Consistent with student needs	(27.5)	(25)	(47.5)
6.2.2 Consistent with local needs	66 (33)	44 (22)	90 (45)
6.3 Structure			
6.3.1 Consistent with the goals	50 (25)	30 (15)	120 (60)
6.3.2 Consistent with the student needs	70 (35)	45 (22.5)	85 (42.5)
6.3.3 Consistent with the local needs	75 (37.5)	35 (17.5)	90 (45)

Table: 3 shows the respondents' perception towards the goals, content and structure of the secondary curriculum at present. It could be summarized from this table that 25% of the respondents highly agree, 50% of the respondents moderately agree and 25% of the respondents disagree that the goals of the present curriculum are clear. This indicates that 75% of the respondents agree that the goals of the curriculum are clear.

Also 22.5% of the respondents highly agree, 27.5% of the respondents moderately agree and 50% of the respondents disagree that the goals of the present curriculum are consistent with local needs. Here the opinions of respondents are balanced; some 50% of the respondents agree that the curriculum goals are consistent with local needs, while 50% of the respondents disagree. It is interesting that 50% agree that the goals of present curriculum are consistent with local needs.

Further, 12.5% of the respondents highly agree and 30% of the respondents moderately agree that the present curriculum goals are consistent with national goals, while 57.5% of the respondents are of opinion that the curriculum goals are not consistent with national needs.

When considering the responses for the consistency of the goals in terms of local and national needs it could be seen that, in general, the perception of the majority of the respondents is that the curriculum goals are not consistent with the present local and national needs.

When the content of the present curriculum is taken into consideration, 27.5% of the respondents highly agree and 25% of the respondents moderately agree that the content of the curriculum is consistent with student needs while 47.5% of the respondents disagree to it.

At the same time, 33.% of the respondents highly agree and 22.% of the respondents moderately agree that the present curriculum content is consistent with local needs, but 45% of the respondents feel that the curriculum content is not consistent with local needs. Here more than 50% the respondents are of opinion that the curriculum content is consistent with the local needs. From this it could be summarized that the majority of the respondents perceive that local needs may not change very much and therefore the content is consistent with the present.

With regard to the structure of the present curriculum, 25% of the respondents highly agree and 15% moderately agree that the structure of the curriculum is consistent with the goals, while 60% of the respondents indicate that it should not be so. It could be seen that 60% of the respondents believe that the structure of the curriculum should not be consistent with goals of present.

Also 35% of the respondents highly agree and 22.5% moderately agree that the structure of the present curriculum is consistent with student needs. But 42.5% of the respondents are of opinion that the structure of the curriculum should not be consistent with the student needs. From this it could be derived that the majority of the respondents hold the opinion that the structure of the curriculum is consistent with the student's present needs for the present.

Where the consistency of the structure of the present curriculum with the local needs is concerned, 37.5% highly agree and 17.5% of the respondents moderately agree that the structure of the curriculum is consistent with the local needs while 45% of the respondents disagree.

It can be concluded that 75% of the respondents are of opinion that the goals of the present curriculum are clear. With regard to the consistency of the goals of the present curriculum with the local needs 50% agree and 50% of the respondents disagree. Similarly, 42.5% of the respondents were of opinion that the goals of the present curriculum are consistent with the national goals.

Some 52.5% of the respondents agree that the content of the present curriculum is consistent with the student needs. Also 55% of the respondents agree that the content of the present curriculum is consistent with the local needs.

Another 40% of the respondents agree that the structure of the present curriculum is consistent with goals of the present curriculum, while 57.5% of the respondents agree that the structure of the present curriculum is consistent with the student needs. Meanwhile 55% of the respondents thought that the structure of the present curriculum is consistent with the local needs.

Table 4 shows the distribution of perceptions of the respondents towards the future curriculum.

Table 4 : Respondents' Perception of Goals, Content, and Structure of Future Curriculum

Curriculum of secondary education	Future		
	Highly agree n (%)	Moderately Agree n (%)	Disagree n (%)
6.1. Goals	05	195	
6.1.1 Goals are clear	(0)	(2.5)	(97.5)
6.1.2 Should Consistent with local needs	50 (25)	75 (37.5)	75 (37.5)
6.1.3 Should Consistent with national goals	35 (17.5)	65 (32.5)	100 (50)
6.2. Content			
6.2.1 Should Consistent with student needs	45 (22.5)	75 (37.5)	80 (40)
6.2.2 Should Consistent with local needs	50 (25)	45 (22.5)	105 (52.5)
6.3 Structure			
6.3.1 Should Consistent with the goals	25 (12.5)	55 (27.5)	120 (60)
6.3.2 Should Consistent with the student needs	35 (17.5)	55 (27.5)	110 (55)
6.3.3 Should consistent with the local needs	40 (20)	50 (25)	110 (55)

Table:4 shows the respondents' perception towards the goals, content and structure of the secondary curriculum in the future. With regard to the goals, 97.5% of the respondents did not agree that the goals of the future curriculum are clear. This shows that though the goals of the curriculum are clear for the present they may not be clear for the future. Therefore the goals need to be revised in terms of the future needs of the country to meet the demands of society and the job market. Where the future curriculum is concerned 25% of the respondents highly agree and 37.5% of the respondents moderately agree that the goals of the future curriculum should be consistent with the local needs. While 37.5% disagree with it, we can see that 62.5% agree that they should be consistent with the future curriculum.

Furthermore, 17.5% of the respondents highly agree and 32.5% of the respondents moderately agree that the goals of the future curriculum should be consistent with national goals, while 50% of the respondents disagree. When considering the responses for the consistency of the goal in terms of local and national needs their perception slightly differs with respect to the future curriculum. An average of 56.5% of the respondents are of the opinion that the goals should be consistent with the future curriculum.

Regarding the content of the future curriculum, 22.5% of the respondents highly agree and 37.5% of the respondents moderately agree that it should be consistent with student needs, while 40% disagree. This shows that most of the respondents are of the opinion that the present content is suitable even for the future. Also, 25% of the respondents highly agree and 22.5% of the respondents moderately agree that the content of the future curriculum is consistent with the local needs while 52.5% disagree. Here more than 50% of the respondents are of opinion that the curriculum content is consistent with the local needs. From this it could be summarized that the majority of the respondents perceive that local needs may not change very much and therefore the content is consistent with the future needs.

Further, 12.5% of the respondents highly agree and 27.5% of the respondents moderately agree that the structure of the future curriculum should be consistent with the goals. Here it could be seen that 60% of the respondents believe that the structure of the curriculum should not be consistent with goals of the future.

When the structure of the future curriculum is taken into consideration, 17.5% of the respondents highly agree and 27.5% of the respondents moderately agree that the structure of the curriculum should be consistent with the student needs, while 55% of the respondents disagree. From this it could be derived that the majority of the respondents hold the opinion that the structure of the curriculum should not be consistent with their future needs.

Where the consistency of the structure of the future curriculum is concerned 20% of the respondents highly agree and 25% of the respondents moderately agree that the future curriculum should be consistent with local needs, while 55% of the respondents disagree. Here the majority of the respondents have indicated that the structure of the curriculum should not be consistent with the local needs of the future.

It could be summarized that 97.5% of the respondents perceived that the goals of the future curriculum are not clear. With regard to the consistency of the goals of the future curriculum, 62.5% of the respondents perceive that the future curriculum may be consistent with the local needs. Similarly 50% of the respondents perceive that the goals of the future curriculum should be consistent with the national goals.

Further, 60% of the respondents perceived that the content of the future curriculum should be consistent with the student needs. Some 47.5% of the respondents perceived that the content of the future curriculum should be consistent with local needs. Another 40% of the respondents perceive that the structure of the future curriculum should be consistent with its goals, 45% of the respondents perceived that the structure of the future curriculum will be consistent with the student needs. Meanwhile 45% of the respondents perceived that the structure of the future curriculum should be consistent with local needs.

Analysis of interview

The responses for research question No. 2, “How can the gap between the present and the future secondary school curriculum be minimized?” are discussed and analyzed in this section. Here an attempt is being made to analyze the opinions of the curriculum experts on reducing the gap between the needs of the present and the future secondary school curriculum.

The opinions of the curriculum experts were obtained using an interview schedule. The responses revealed the perceptions of the experts with regard to minimizing the gap between the present and the future curricula for the secondary schools. Responses were related to the goals, content and the structure of the present curriculum compared to the needs of the future curriculum. The respondents mostly disagreed with suitability of the goals, content and structure of the present curriculum for the future needs of the secondary schools.

The responses in relation to the goals of the present curriculum indicate that most of the respondents are of opinion that the goals are not consistent with student needs and local needs. Also, most of the respondents agree that the goals of the present curriculum are inconsistent with the student capabilities. Further it should be noted that the respondents unanimously agreed that the goals of the present curriculum are not consistent with the future needs. This indicates that the respondents feel that the goals of the present curriculum need to be revised.

Responses for the consistency of the content of the present curriculum too showed that most of the respondents are of opinion that the content of the present curriculum is not consistent with the students' needs and local needs. The respondents further indicated that the content of the present curriculum is also not designed to cater to the students' needs. Moreover, the respondents are of the opinion that the structure of the curriculum is not consistent with the goals, student needs and vision.

They suggested that the curriculum developers should address this problem in order to change the goals of the curriculum to cater to the needs of the students, their capabilities and their future needs. It was further suggested that the change should minimize the gap in the goals of present and future curricula such that it will be consistent with student needs such as their wants, desires and their culture. It also should emphasize the local needs of the country and focus more on developing student capabilities. The respondents stressed that the future needs should be taken into consideration when spelling out the curriculum goals so that the gap may be reduced. Thus it could be surmized that the curriculum developers should employ futuristic approaches in the process of curriculum development in order to reduce the gap. It was further pointed out that there is no provision in the present curriculum to provide an awareness of job opportunities to the students. It is the responsibility of the teachers to provide guidance to the

learners for employment. The curriculum should be more competency-oriented; as such the syllabi for the various subject areas should contain the required competencies for the future needs of the students. Therefore the content of the curriculum should enhance the provision of needs of the students and the local needs in order to reduce the gap between the present and the future curricula. The curriculum structure should thus balance the aspects of goals, needs of students and their vision.

The interviewees attest that it is apparent the present curriculum does not fulfil the goal, content and the structure whereby a gap occurs in the curriculum. At present the learning environment forces the students to prepare for answering the examination paper. This depresses the students spiritually and mentally. This situation does not help the students to realize their real needs. This is the gap which is seen. In this regard the interviewees were of the opinion that the curriculum developers should focus their attention on developing a curriculum that will provide the necessary knowledge, attitude and skills to the learner in contrast to the present examination oriented curriculum.

Further, they stated that if this gap is not reduced the students will become more stressed and feel mentally burdened while engaging in learning. They further pointed out that due to the present rapid advancement and development of technology and other fields, what is taught in the class at present is more meaningless to the needs of the future. The curriculum developers should take this point into consideration when planning the future curriculum. They further emphasized that the real needs of the learners should be studied through enquiries with the teachers prior to developing the curriculum as at present the real needs of the students have not been taken into consideration in the curriculum. It is important to ensure that the students should not face any mental stress in the process of learning.

Education is provided for both students from urban and rural areas. In developing a curriculum this is another factor that should be considered. The interviewees suggested that the syllabus for each subject and each unit should be designed, in future, in a local or a global context. In Sri Lanka, in general, rural children are quiet ignorant of the urban set up. Hence a rural child will find it difficult to understand the theme of a lesson based on an urban set up. Similarly an urban child will find it difficult to understand lessons based on a rural set up.

Thus the interviewees suggest that lessons should be based on the children's needs and the needs of the country and lesson delivery should be more practical so that the children could grasp and comprehend the content.

They further stated that it is very important for the learner to learn with an understanding of the nature of the subject matter, because only then can the learner achieve the goals of the curriculum. Good ethics should be taught and inculcated in order to achieve the goals of the country, especially the goal of bringing about social cohesion among the diverse communities of Sri Lanka.

In concluding the above discussion, it could be surmized that the overall suggestion made by the respondents in regard to the goals, content and structure of the present curriculum is that it should be modified to suit the needs and capabilities of the learners in order to bridge the existing gap.

The respondents fully agreed that the goals of the future curriculum should be consistent with student needs. Most of the respondents were also of opinion that the future curriculum should be consistent with the local needs and learner capabilities. Respondents also unanimously agreed that goals of the future curriculum should be consistent with the needs of the future; unless this is achieved, there will be a wide gap between the actual curriculum and the intended one. It was also suggested that more researches and studies should be carried out to identify the needs and capabilities of the learner in order to avoid any gap. Also new knowledge will have to be adapted in accordance with global changes in the field of technology.

The day to day need of the future will be complex due to the rapid advancement of modern technology. It is important that the future curriculum, therefore, should provide the relevant knowledge, attitudes and skills necessary to cope with the new needs created by such developments in technology. The future curriculum should address the issue of developing suitable future citizens who could contribute to the development of the country with their new knowledge.

In Sri Lanka, the present public examinations systems for which the learners in the GCE O/L and A/L are groomed are quite predictable. That is, if one analyzes the past question papers for about five years it is possible to predict the questions of the forthcoming examination paper to an accuracy of about 70%. Thus teachers, if they have been marking examiners, could easily predict a

majority of the questions. Such teachers are at an advantage in preparing their students for the relevant examination. In this situation what really happens is the learners memorize the mode of answering the questions. This system does not produce a talented and knowledgeable citizen but only a good examinee. Therefore the evaluation methods of students' achievement in the public examinations need to be revised so that the goals of catering to the students' and local needs through the future curriculum could be realized.

Interviewees pointed out that the learning and teaching process also should change. At present the learner is dependant only on the teacher to acquire knowledge. Learners should become independent of the teacher and should be guided to seek knowledge on their own from various sources. Thus the curriculum should guide the teachers to apply new methods in order to make learners acquire knowledge from various sources.

In summarizing the above discussion, it could be stated that majority of the respondents agree that the structure of the future curriculum should be consistent with the goals, needs of students and vision for the future. Therefore the curriculum goals should be identified and spelt out to suit the future needs of the learner as well as society in order to reduce the gap between the present and future needs of the learners in the secondary grade classes. Basically the subject oriented curriculum catering to the vocational needs will help the learner in the future because it enables the learner to achieve the vocational needs and moulds the learner to fit into the future world. Table 5 summarizes the responses.

Table 5 : Summary of Responses on Goals, Content and Structure of Present and Future Curriculum

Goals, Content and Structure	Present		Future	
	Yes	No	Yes	No
1.0 Goals				
1.1 Goals are consistent with student needs	6	14	20	0
1.2 Goals are consistent with local needs	6	14	18	2
1.3 Goals are consistent with students' capabilities	4	16	18	2
1.4 Goals are consistent with future needs	0	20	20	0
2.0 Content				
2.1 Consistent with student needs	6	14	18	2
2.2 Consistent with local needs	6	14	20	0
3.0 Structure				
3.1 Consistent with the goal	8	12	18	2
3.2 Consistent with student needs	6	14	20	0
3.3 Consistent with the vision	8	12	20	0

The interview Items 4, 5 and 6 dealt with the capabilities that the learner should possess in the GCE O/L and A/L classes. The majority of the respondents stated that the students in GCE O/L will not be able to further their studies in the academic field and the vocational field and also they will not be able to find employment at present. Similarly, in relation to the capabilities learners should possess in GCE A/L in the present curriculum the responses show that the majority were of opinion that school leavers will not be able to further their studies in the academic field and the vocational field and also that they will not be able to find employment.

In relation to the capabilities learners should possess after completing their O/L and A/L, the responses show that the majority were of opinion that continuing the studies at tertiary level and various other fields does not happen at present; only half of the respondents partially agreed that school leavers will be able to go for work. The majority of responses stated that the present curriculum does not provide the learners with the ability of acquiring occupations after leaving school. This too shows that there is a gap between the present curriculum and the students' needs.

The responses for the capabilities that the learners should possess after completing their O/L and A/L show that the respondents highly disagreed that the learners *will be able to further their studies in the academic field or in various other fields and find occupations*. They suggested that these capabilities should be incorporated in the curriculum.

In Sri Lanka the GCE A/L is fast becoming the basic qualification for employment. Therefore those who leave school without completing the GCE O/L do not have the ability to find a good job. So the future curriculum should help the learners to identify their abilities and develop their skills to fit into the future world fruitfully because the majority of the Sri Lankans seek white collar jobs. Hence, curriculum developers should take these aspects into consideration when designing the future curriculum.

But, in relation to the future, all the respondents agreed that the learners will be able to further their studies in the academic field. Most of the respondents were of the opinion that in future the learner will be able to continue studies in the vocational field too and also will be able to get employed. From the above responses it could be summarized that most of the respondents agree that learners in the GCE O/L class in future should be able to further their studies in the academic and vocational fields and thus they should be able to find employment. Provision of the above capabilities in the curriculum would reduce the gap in the curriculum in the present and the future.

Most of the respondents are of the opinion that the future A/L learner will be able to do their further academic studies as well as vocational studies and also they will be able to get employment under the future curriculum. This shows that the respondents feel that the future curriculum will enable learners to further

their academic and vocational studies and also enable them to get jobs. On the whole it could be summarized that the demand for the learners to continue their academic studies is high.

The responses in relation to the capabilities that the learners should possess after completing their O/L and A/L in the future show that the interviewees generally agreed with *the ability of the students to find occupations, to do their further studies in various fields, and go for work*. Most of the respondents were of opinion that the learners will be able to find jobs. The results showed that capabilities that the learners should possess after completing their O/L and A/L will help the learners to find suitable employment.

Here too the responses indicate that the gap exists. Though they disagreed with the capabilities that the learners would acquire after their GCE O/L and A/L under the present curriculum, they agreed with the capabilities that the learners would acquire after their GCE O/L and A/L under the future curriculum. The respondents suggested that this gap could be minimized by modifying both GCE O/L and GCE A/L curricula such that the students will be able to acquire the ability to further their studies academically as well as vocationally. Thus they will be able to study in various fields and get employed in the present and in near future situations.

They further pointed out that curriculum developers should address the following facts to reduce the gap in the Sri Lankan secondary curriculum thereby providing more capabilities to the students to continue their studies in the academic fields, vocational fields and prepare them for employment in all sectors in the country. But there is fierce competition for employment. Therefore, the new GCE O/L curriculum should provide opportunity to further education in the academic fields as well as vocational fields. The curriculum should challenge the learner to face the future world as it becomes a global village. The students should face the global needs, such as the industrial field, information technology, computer literacy, and so on. So the future curriculum should be designed to cater to the students' need to continue their studies. However, the child is ready and matured enough to do a job after completing O/Levels and A/Levels. Therefore, at this level, the students should be able to possess a job in the relevant field. The learners thus should get knowledge regarding how to acquire jobs. So the future curriculum can be designed to fulfil the students' needs to further their

studies in the academic and vocational fields and tertiary level. Through this they can find employment and can be taken through the curriculum to their goals.

With regard to the curriculum contents, respondents further stress that the content should synchronize with vocational needs and should develop the learner’s capabilities. Content is generally developed in terms of technology advancement. Technology should link with learner capability because when technology is incorporated into the curriculum the country will advance towards global needs. If not, the learner will be isolated from society as well as global developments. The contents of the present curriculum do not focus on vocational needs or learner capabilities. Therefore it is essential to introduce more practical work in the future, which in turn will motivate the learners toward learning. A summary of the responses is shown in Table 6.

Table 6 : Capabilities Learners Should Possess in O/L and A/L

Capabilities learners should possess	Present		Future	
	Yes	No	Yes	No
4.0 Capabilities that the learners should possess in O/L				
4.1 Able to further their studies in academic field	6	14	20	0
4.2 Able to further their studies in vocational field	6	14	18	2
4.3 Able to go for work	6	14	18	2
5.0 Capabilities that the learners should possess in A/L				
5.1 Able to further their study in academic field	8	12	20	0
5.2 Able to further their study in vocational field	6	14	18	2
5.3 Able to work	8	12	18	2
6.0 Capabilities that learners should possess after completing their O/L and A/L				
6.1 Able to go for work	10	10	18	2
6.2 Able to further their studies at tertiary level	6	14	16	4
6.3 Able to further their studies various fields	6	14	20	0

Analysis of data from curriculum experts

The purpose of this section is to answer the Research Question No. 3. Under this stage is the analysis of data gathered from the opinions of the curriculum experts regarding development of guidelines for the new secondary school curriculum. The findings for Research Question No. 3 “What guidelines should be planned for a new curriculum for secondary schools?” will be achieved by applying Delphi technique. In this section descriptive statistics of median, mode and inter quartile range are used simultaneously to obtain the results.

The questionnaire is administered to a panel of curriculum experts during this round. Collected data are then interpreted in order to identify the consensus of the experts on the guidelines for constructing the future curriculum. A computer package is used to determine the consistency of the opinions of the experts. Difference between the median and mode is analyzed to determine the consistency of the opinions of the experts and difference between the third and first quartiles to determine the extent of achievement of the curriculum according to the opinions of the experts between rounds.

Analysis of data included the following topics:

1. Descriptions of the experts
2. Round one
3. Round two

Descriptions of the curriculum experts

Several criteria were used as basic requirements for selecting the panel of curriculum experts. To ensure the delivery of subjective opinion the following are considered as criteria for selecting the panel of curriculum experts:

1. Age of curriculum experts
2. Educational background
3. Experience in curriculum development

In selecting the panel of experts, the purposive method is utilized since the criteria for selecting the experts are according to their expertise rather than at random. In accordance with the determined criteria, 20 curriculum developers from the National Institute of Education representing different departments are invited to participate in this study (100 percent accepted the invitation). Details are elaborated in Table 7, 8, 9, 10, and 11.

Round One

In this round the panel of curriculum experts was requested to assess the open ended questionnaire. Each curriculum expert is expected to add or delete any items as consistent, important or unimportant.

The results of the questionnaire assessment are summarized in the form of rating scale. The scale is a five point scale based on the Likert scale. The details of each scale are indicated in the questionnaire.

Analysis of Consensus by using the median, mode and inter-quartile range

Table 7 shows the results of analysis in the form of median, mode and inter quartile range for the responses.

Table 7: Analysis of Expert Consensus with Regard to Curriculum Goals, Content and Structure

Curriculum goals, content and structure	Median	Mode	D	Inter-quartile range
1.0 Goals				
1.1 Goals are consistent with student's needs	4	4	0	1
1.2 Goals are consistent with local needs	3	4	-1	1
1.3 Goals are consistent with student's capabilities	3	3	0	1
1.4 Goals are consistent with present needs	3	4	-1	1
1.5 Goals are consistent with future needs	3	3	0	0
2.0 Content				
2.1 Consistent with student's needs	3	3	0	0
2.2 Consistent with local needs	3	3	0	1
2.3 Consistent with present needs	3	3	0	1
2.4 Consistent with future needs	3	3	0	0
3.0 Structure				
3.1 Consistent with the goal	3	3	0	1
3.2 Consistent with the student needs	3	3	0	1
3.3 Consistent with the vision and mission	3	3	0	1

Table 7 shows that the median and mode of item 1.1 is 4, and for items 1.3 and 1.5 is 3. The difference between median and mode of items 1.1, 1.3 and 1.5 is 0 and the inter quartile range is 1 for items 1.1, 1.2, 1.3, 1.4, 2.2, 2.3, 3.1, 3.2 and 3.3. The inter quartile range for items 1.5, 2.1 and 2.4 is zero. This shows that there is consistency of the opinions of experts for the items 1.1, 1.3 and 1.5. Also it shows that the panel of experts highly agree with the items 1.1 to 1.4, items 2.2, 2.3, 3.1, 3.2 and 3.3 and moderately agree with the rest of the items.

Table 8 shows the analysis of consensus of the experts with regard to the capabilities that learners should possess in GCE O/L.

Table 8: Analysis of Expert Consensus with Regard to Capabilities Learners Should Possess in GCE O/L

Capabilities that the learners should possess	Median	Mode	<i>D</i>	Inter-quartile range
4.0 Capabilities that the learners should possess in O/L				
4.1 Able to further their studies in academic field	4	4	0	1
4.2 Able to further their studies in vocational field	3	3	0	1
4.3 Able to go for work	3	3	0	1
5.0 Capabilities that the learners should possess in A/L				
5.1 Able to further their study in academic field	4	4	0	1
5.2 Able to further their study in vocational field	3	3	0	2
5.3 Able to work	3	3	0	1
6.0 Capabilities that learners should possess after completing their O/L and A/L				
6.1 Able to go for work	3	3	0	2
6.2 Able to further their studies at tertiary level	3	3	0	1
6.3 Able to further their studies various fields ⁵	5	0	1	1

Table 8 shows that median and mode of the items 4.1 and 5.1 is 4. The difference between median and mode of the above items is 0. The inter quartile range is 1 for all items except for items 5.2 and 6.1 for which the inter quartile range is 2. This shows that there is very high consistency of opinion of experts for item 6.3 and that all the other items too have consistency of opinion of experts. Further it is evident from Table 4.28 that the experts have very highly agreed with item 6.3. Table 4.27 shows that expert panelists very highly agreed with item 6.3, highly agree with items 4.1 and 5.1 and moderately agree with other items.

Table 9 gives the analysis of the consensus of the experts in relation to the guidelines for constructing the future curriculum.

Table 9: Mean Scores of Curriculum Goal, Content and Structure

Curriculum goals, content and structure	Mean	SD
1.0 Goals		
1.1 Goals are clear	3.7	0.81
1.2 Goals are consistent with student needs	3.3	0.61
1.3 Goals are consistent with local goals	3.2	0.76
1.4 Goals are consistent with national goals	3.4	0.44
2.0 Content		
2.1 Consistent with student need	3	0.4
2.2 Consistent with local need	3.2	0.76
2.3 Consistent with present need	3.4	0.64
2.4 Consistent with future need	3	0.4
3.0 Structure		
3.1 Consistent with the goal	3	0.76
3.2 Consistent with the student need	3.2	0.45
3.3 Consistent with vision and mission	3.4	0.64

Note. Maximum Marks = 5

Table 9 shows the mean and standard deviation for the three areas dealing with the Goals, Content and Structure of the curriculum. The mean and *SD* for *Whether the Goals of the curriculum are clear* are 3.7 and 0.81 respectively which shows that the respondents highly agreed that the curriculum goals are clear. It should be noted that the mean and *SD* for the item 1.4 *whether the goals are consistent with national goal* are 3.4 and 0.44 respectively. This too shows that the respondents highly agree that the curriculum goals are consistent with the national goals. Also it could be further surmized that on the whole the respondents agree that the curriculum goals are consistent with the student needs and the local needs because the means are fairly high and the *SDs* too are in close range.

A similar pattern is seen with regard to the curriculum content too. Here too, in general the respondents have agreed the curriculum content is consistent with the local and present needs. The mean and *SD* for the items 2.1 and 2.4 are equal. These two items have the lowest *SD* which indicates that the respondents strongly feel that the curriculum content is consistent with the needs of the students and the future.

With regard to item 3.3 which inquires whether *the structure of the curriculum is consistent with vision and mission* the mean and *SD* for the responses were 3.4 and 0.64. This indicates that the respondents agree that the structure of the curriculum is consistent with vision and mission. Also for the other items 3.1 and 3.2 the respondents have moderately agreed that the structure of the curriculum is consistent with the goals and the needs of students.

Table 10 shows the overall mean scores for what *capabilities the learners should possess while learning in the GCE O/L and in GCE A/L* and *the capabilities they should possess after GCE O/L and GCE A/L*.

Table 10: Mean Score of Capabilities that the Learners Should Possess

Capabilities that the learners should possess	Mean	SD
4.0 Capabilities the learners should possess in O/L		
4.1 Able to further their studies in academic field	3.7	0.61
4.2 Able to further their studies in vocational field	3.3	0.81
4.3 Able to work	3	0.8
5.0 Capabilities the learners should possess in A/L		
5.1 Able to further their studies in academic field	3.6	0.64
5.2 Able to further their studies in vocational field	3.1	0.89
5.3 Able to work	3.4	0.64
6.0 Capabilities learners should possess after completing their O/L and A/L		
6.1 Able to go for work	3.0	0.64
6.2 Able to further their studies at tertiary level	3.4	0.89
6.3 Able to further their studies various fields	4.4	0.64

Note. Maximum Marks = 5

In Table 10, item 4.1 which dealt with *the ability of the learners in the GCE O/L classes to further studies in the academic field* scored the highest mean of 3.7 and the lowest SD of 0.61. It is quite evident that the respondents were of the opinion that it is very essential that the learners should be able to continue their studies in the academic field rather than diverting to the vocational field in order to get employed without pursuing higher education. The same pattern is seen in item 5.1 which also has the highest mean in the group. This too emphasizes that the curriculum experts are of the opinion that the learner in the GCE O/L class should pursue higher studies in the academic field instead of furthering their studies in the vocational field. The mean for item 5.3 is slightly higher than that for item 4.3. Here too it is evident that the respondents felt that the learner should seek higher education before employment. This is further reiterated in Item 6.3 which achieved the highest mean of 4.4. When these response patterns are taken as a whole, it is quite clear that the curriculum experts feel that the learners should expand their knowledge through continuing their studies beyond secondary level to the tertiary level. This shows that the respondents were thinking in terms of the needs of the country, that is, to develop citizens in the future who will be able to adapt to a rapidly changing world.

Conclusion

The findings have been very enlightening and helpful to us in formulating guidelines for the secondary school curriculum in Sri Lanka. The majority of the curriculum experts have clearly shown that the goals of the present secondary school curriculum are consistent with the capabilities and needs of students, and should be included in the future planning of the curriculum. However under the present secondary school curriculum, the expert panel found that the current curriculum is moderated and needed improvement under the new structure to meet the students' needs and national needs.

The findings of the curriculum goal, content and structure show that there is consistency in the opinions of experts for items 1.1, 1.3 and 1.5 that are *goals should be consistent with students' needs, present needs, and local needs*. It also reveals that consistency of goals with students' needs highly agree, while the others moderately agree. The contents with the present and local needs highly agree and the contents with the future and student needs are consistent. Under the structure of curriculum, all items 3.1, 3.2, and 3.3 that are *consistent with the goal, student needs, and vision and mission* moderately agree.

The finding related to capabilities students should possess in GCE O level and A level curriculum indicate that there is very high consistency in opinion of experts under item 6.3 that *students are able to further their study in various fields* and the remaining items should also have the same consistency of opinion from the experts. Also the expert panelists highly agree with items under 4.1 and 5.1 that *students are able to further their study in academic field in O/L and A/L* and partially agree with the remaining items.

Proposed Guidelines for the Secondary School Curriculum

The guidelines from this study can be applicable for the near future curriculum planning process in Sri Lanka. Through these guideline the National Institute of Education can strengthen the curriculum development process in the future.

Goals, Content and Structure of the new curriculum can be planned according to the following guidelines.

1.0 Goals of Curriculum

- 1.1 Goals should be Consistent with student needs
- 1.2 Goals should be Consistent with present needs
- 1.3 Goals should be Consistent with local needs
- 1.4 Goals should be Consistent with students Capabilities
- 1.5 Goals should be Consistent with future needs

2.0 Content of Curriculum

- 2.1 Content should be consistent with student needs
- 2.2 Content should be consistent with future needs
- 2.3 Content should be Consistent with local needs
- 2.3 Content should be Consistent with local needs
- 2.3 Content should be Consistent with local needs
- 2.4 Content should be Consistent with present needs

3.0 Structure of Curriculum

- 3.1 Structure should be consistent with the goal
- 3.2 Structure should be consistent with the student needs
- 3.3 Structure should be consistent with the vision and mission

Guidelines of Capabilitie he learners possess in OL and AL in the new curriculum should be as follows.

4.0 Capabilities learners should possess after completing O/L

- 4.1 Able to further their study in vocational field
- 4.2 Able to further their study in vocational field
- 4.3 Able to go for work

5.0 Capabilities learners should possess after completing A/L

- 5.1 Able to further their study in academic field
- 5.2 Able to work
- 5.3 Able to further their study in vocational field

6.0 Capabilities learners should possess after completing both their O/L and A/L

- 6.1 Able to further their study in various fields
- 6.2 Able to further their study at tertiary level
- 6.3 Able to go for work

The majority of the curriculum experts have clearly shown that the goals of the present secondary school were consistent with the capabilities and needs of students, and should be included in the future planning of the curriculum. However under the present secondary school curriculum, the expert panel found that the current content was moderate and needed improvement under the new structure to meet the students' needs and national needs.

The findings on the curriculum goal, content and structure show that there was consistency in the opinions of experts for items 1.1 to 1.5 but they highly agree with 1.1 that is the goal should be consistent with students' needs. Under numbers 2.1 and 2.4, the content of curriculum is consistent with the needs of the students and the future and also under items 3.1, 3.2, and 3.3, the structure of curriculum is consistent with the goal, the needs of students and vision and mission. The findings related to the capabilities student should possess in GCE O-Level and A-Level curriculum indicated that there is very high consistency in opinion of experts under item 4.1, 5.1, and 6.3 that are able to further study in academic field in the O-Level and A-Level, and able to further studies in various fields in A-Level.

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A Study of the Attendance Patterns of G. C. E. (A/L) Student at School

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ABSTRACT *Data were collected through 23 months from June 2004 to April 2006 on No=890 students who had sat their G.C.E. (A/L)s for the first time in 2006 selected proportionally as 4 variable strata in terms of Science, Arts, Commerce and gender. The sample had 56 Sinhala/Tamil medium, urban/rural, type 1AB/1C schools in the districts of Colombo, Gampaha, Kandy and Polonnaruwa, belonging to zones representative of the socio-economic conditions of Sri Lanka. Twenty principals from the school sample, 52 teachers, 15 tuition masters/ mistresses and 31 parents of students in the sample were selected for the purpose of interviews. The research was implemented based on eight research questions for the purpose of satisfying the aim of understanding the patterns of attendance of G.C.E. (A/L) students. According to the study, while various patterns of attendance was evident in the districts of Colombo, Gampaha, Kandy and Polonnaruwa, between urban and rural 1AB/1C schools, among students pursuing G.C.E. (A/L) Science, Commerce and Arts streams, in terms of gender and among Sinhala and Tamil medium students, it was also found that none of these students had completed 80% school attendance. With respect to results, it has been revealed that private tuition contributes more to the achievement of creditable success in examinations than school education and that, consequently, confidence in school education has been eroded.*

Introduction

Since the government has accepted the policy of “education for all”, every Sri Lankan student is entitled to receive school education from Grade 1 up to Grade 13 and sit their G.C.E. (A/L) examination at state expense.

It has been stipulated (New Education Reforms Program – 1998) that one requirement for a student to be entitled to sit the G.C.E. (A/L) examination is that he/she should have attended school for 80% of the days school is conducted. Student should attend school for the completion of the two prescribed projects, completion of the forms in the student progress record book, maintain field records and notes with respect to certain subjects, as examination requirements.

All students studying in Grade 12 and 13 (G.C.E. (A/L)) are between 16-18 years of age they are in their adolescence. It is between the forces of adolescence (Hurlock, 1995) and the pressures of achieving the expectation of entering university, one of objectives of the extremely competitive G.C.E. (A/L) examination, that these students prepare for the examination (Bisomenike, 1995).

Various ideas and beliefs regarding the attendance or non-attendance of students attached to the three Science, Commerce and Arts streams are ingrained in society to a greater or lesser extent. According to this it is said that the attendance of G.C.E. (A/L) students at school is less in various districts in Sri Lanka and that this level of attendance of students is less than 80% of the number of days the school is conducted. The reason for this, it has been found, is that G.C.E. (A/L) students necessarily attend tuition classes during week-ends as well as on week days (Manchanayake, & Nanayakkara, 1986; Kodituwakku, 1992).

Direct studies or research on school attendance of G.C.E. (A/L) students are scarce in research literature. A study regarding “the problem of gradually diminishing participation of G.C.E. (A/L) students in the school; conducted by Ranasinghe, inquires about the attendance of G.C.E. (A/L) students, at school (Ranasinghe, 1999)

It has been revealed that the non-school attendance of students and imbalance of in-puts has become an immense national problem while a massive volume of resources are expended. Only 35.7% of the students in the sample have exceeded 80% attendance since the application forms for the examination had been forwarded. Attendance had dropped to 20.9% after the examination forms had been sent. (Ranasinghe, 1999).

According to several researches, apart from the research above, regarding the attendance of students at tuition classes, it has been disclosed that while 77.2% students attended additional classes, that they spent about 7 ½ hours on private tuition. (Hemachandra, 1982). Research literature indicates that the private tuition industry has been in existence from as far back as 1970. (De Silva, 1991). Pararajasingham, (1980) has stated in a study restricted to the Jaffna district that 87% of 236 students received private tuition. Premachandra (1982) states that 84% G.C.E. (O/L) and (A/L) students following the Medical, Engineering and Commerce subject streams in the Colombo and Kegalle districts and 61% students in the Kegalle district, following the same subject stream, attended private tuition classes.

A research study made by Manchanayake and Nanayakkara (1986) on island-wide supplementary education, has revealed that 77.2% students in Grades 8-13 attend tuition classes.

In a study conducted by I.R.D.C. under the auspices of the University of Colombo on “Additional School Instruction and Social Justice and the Quality of Education”, it is stated that all G.C.E. (A/L) students attend tuition classes for all subjects and that 88% of the sample have stated that it was important that one attended tuition classes.

A study conducted by Kodituwakku (1992) on how students, teachers, principals and parents perceived education received in tuition classes in comparison to that provided through school education, has revealed differences in the number of students receiving tuition in terms of subject stream, school type and urban/rural status. The study has also revealed that 93% of the sample of 2358 students received tuition and that in terms of districts 100% in Monaragala, 94.3% in Matara, 83.2% in Kandy, 83.1% rural students, 96.8 urban students, and in terms of school type 95.7% from type 1AB schools, 84.2% from type 1C

schools, while in terms of subject stream 97.7% Science, 98.2% Commerce, 83.6% Arts with 93.7% male students and 92.2% female students receiving tuition.

Rambukwella (1996) has shown that out of a sample of 186 urban and rural G.C.E. (A/L) students 100% sought additional assistance. Since, it has been found on the basis of studies conducted from 1980-1999, that a greater percentage of students studying in G.C.E. (A/L) grades sought tuition, and since the present study focuses directly on the patterns of attendance at school of students studying in G.C.E. (A/L) classes, the research aims have been established on the assumption that reasons here influenced absence from school and pursuit of private tuition.

Research objectives

- To discover school attendance patterns of G.C.E. (A/L) students.
- To discover causes that influence the various pattern of school attendance of G.C.E. (A/L) students.
- To discover the extent to which education policy related to school attendance of G.C.E. (A/L) students, is implemented.
- To identify factors that influence school attendance of G.C.E. (A/L) students and suggest necessary remedial measures.

The research questions below were basis for the acquisition of information and data on various views in order to initiate the research.

Research questions

1. Are there various patterns related to the school attendance of G.C.E. (A/L) students in Grades 12/13?
2. Are there significant differences in the school attendance patterns of G.C.E. (A/L) students when considered specifically in terms of district, rural/urban state, gender and subject stream?
3. Are there significant differences in the school attendance patterns of G.C.E. (A/L) students in terms of school type (1AB, 1C) rural/urban state and gender, within the district?

4. Have the attitudes of G.C.E. (A/L) students influenced their school attendance patterns?
5. Is the school attendance patterns of G.C.E. (A/L) students influenced by their teachers (school/tuition) and school principals?
6. Are the school attendance patterns of G.C.E. (A/L) students influenced by their parents, peers and the opposite sex?
7. Does national education policy influence the school attendance of G.C.E. (A/L) students?
8. What are the steps that could be taken to improve the school attendance of G.C.E. (A/L) students?

In order to achieve the objectives of the research through the responses to the research questions above, the following types of Data are necessary.

- Data on the school attendance of Grades 12 and 13 G.C.E. (A/L) students are required in terms of male/female, school type of the 4 districts, subject stream, urban/rural state and Sinhala/Tamil medium.
- Data on the disclosure of attitudes related to the factors that influence school attendance of G.C.E. (A/L) students.
- Data connected to the variables of the attitudes borne by teachers, parents, peers and the opposite sex that can influence the school attendance of G.C.E. (A/L) students.
- Data that reveal the extent to which education policy related to the school attendance of G.C.E. (A/L) students, is implemented.
- Data on strategies the can be adopted to increase the school attendance of G.C.E. (A/L) classes students.

Population

The target population of the research are students receiving education in Sinhala/Tamil media, teachers (school/tuition) teaching them, principals of their respective schools and parents of Grade 12, 13 students in type 1AB/1C schools where G.C.E. (A/L) are conducted.

Student sample

The Administrative Districts of Sri Lanka were divided into five zones by the Central bank of Sri Lanka in the socio-economic survey conducted in 1978/79. The four districts of Colombo, Gampaha, Kandy and Polonnaruwa were selected at random so as to include four of these zones. While the North East was not selected on account of the unfavourable conditions prevailing there, Tamil medium schools were selected from the districts of Polonnaruwa and Kandy. In generalizing with respect to the Tamil medium, this was done so as to minimize limits.

1. Selection according to stratified random sampling method of 10% of the 1AB/1C schools totaling 56 from the selected districts proportionally in terms of urban/rural schools (Table No.1)
2. Selection of a sample of 10% students N=890 who studied in Grades 12/13 in terms of subject stream (Science, Commerce, Arts) and proportionally in terms of gender
3. Selection proportionally in terms of subject stream and gender of a 05% sample of students N=445 studying in Grade 13 of the selected schools for the provision of questionnaires

School Sample

Table I : School Sample

Total number of schools in District						10% of School Sample		
	Type	Medium	Urb.	Rur.	Total	Urb.	Rur.	Total
N=240	1AB	Sinhala	46	21	67	5	2	7
Colombo	1C	Sinhala	44	34	78	5	3	8
N=220	1AB	Sinhala	32	22	54	3	2	5
Gampaha	1C	Sinhala	43	53	96	4	5	9
N=340	1AB	Sinhala	15	8	23	1	1	2
Kandy		Tamil	15	8	23	1	1	2
	1C	Sinhala	16	102	118	2	10	12
		Tamil	10	21	31	1	2	3
N=90	1AB	Sinhala	4	8	12	1	-	1
Polonnaruwa		Tamil	-	-	-	-	-	-
	1C	Sinhala	13	27	40	1	3	4
		Tamil	2	3	5	-	1	1
N=890	1AB	Sinhala	102	75	177	11	6	17
		Tamil	15	8	23	1	1	2
Polonnaruwa	1C	Sinhala	116	216	332	12	21	33
		Tamil	12	25	37	1	3	4
Total			245	324	569	25	31	56

(Source : Census Report, Ministry of Education, 2005)

Use of data on N=890 students to obtain data on attendance and non-attendance of students studying in Grade 12 and 13 from 2004-2006 for 12 months (from 2004-2005).

Although it was expected to obtain data through a questionnaire using the sample above in order to identify reasons for non-attendance at school, since the students in the sample, had, having sat their G.C.E. (A/L)s left school, consequently creating a practical problem, it became necessary to present the questionnaire to a sample of students studying in Grades 12/13 in the education year 2005-2007 and obtain data

Other samples

- 25 (20%) of the principals of the schools where the students in the sample were studying.
- 60 (15%) teachers teaching these students.
- 40 (10%) parents of these students.
- 20 teachers teaching in tuition classes.

were included in terms of variables of difficult/not difficult districts, rural/urban status, 1AB/1C type schools and gender and subject stream for purposes of interview.

Data collection

1. Data on school attendance of students were obtained from primary resources, the class registers, with respect to the same set of students, for Grades 12 and 13 (N=890) (for data analysis of research questions 1 to 3).
2. For the purpose of obtaining attitudinal responses a questionnaire comprising 30 items involving 5 responses (don't agree at all, don't agree, medium, agree, agree very much) each, was given to students following these subject streams (Science, Commerce, Arts).

3. Conducting interviews with the principals of the schools to which the students in the sample belong, their class teachers, the parents of these students and teachers teaching tuition classes. Use of a well-planned questionnaire to facilitate eliciting, in depth, reasons connected to the variables related to the questionnaire provided to the students.

Research Process

1. Obtaining data on attendance of G.C.E. (O/L) students from class registers. Data were obtained from 56 schools (as given in Table No. 01) so as to represent a population of N=890 and school type. Obtaining average monthly attendance for 23 months for the period June 2004 to April 2006. Extracting data separately in terms of gender, subject stream, school type 1AB/1C and urban/rural status, Sinhala/Tamil medium, from 56 schools in the districts of Colombo, Gampaha, Kandy and Polonnaruwa. (As in Table Nos. 01).
2. The questionnaire given to G.C.E. (A/L) students comprised 30 items. Of these items 06 dealt with school attendance, 06 items dealt with expectations for the future, 03 items dealt with the syllabus, 04 items dealt with examination requirements (Education Policy), 04 items dealt with school teachers, 05 items dealt with tuition masters, 02 items dealt with the role of the principal, 01 item dealt with parental influence and 02 items dealt with peer and opposite sex, influence. Further by finding out about the time spent on studies and tuition, through the questionnaire, it was possible to confirm information on school attendance. The practicality and validity of the research instrument prepared was confirmed by subjecting a random sample N=40 to a test.
 - Forwarding of questionnaire to students in the sample and receipt of responses back.
 - Interviewing principals, teachers and parents and disclosing in-depth the findings on the items in the questionnaire provided to the students.

In obtaining the data above from 56 schools in 4 districts, the services of graduates with post-graduate qualifications who already had experience in education investigation, was taken.

Data analysis

Data on school attendance of G.C.E. (A/L) students from 4 districts were obtained from the attendance registers of schools, classified according to urban/rural status, school type: 1 AB/1C, subject stream and boys/girls and calculated in terms of the specificity between data and gender. Use of the descriptive analysis method based on percentile tables for the analysis of Grades 12, 13 attendance and application of the Z significance test (Z Test for Two Independent Proportions) meant to find differences between two independent proportions, in order to determine whether student attendance differs significantly according to the variation of each between the sub-sample as well as the investigation of significance, was carried out at $P < .01$ and $P < .05$ level.

Attitude response data were added separately in terms of the item numbers of the questionnaire. In order to examine whether there is a difference according to subject stream the single sample Chi square type significance test was used.

The interviews with principals, teachers (school/tuition) and parents and the responses got for the questionnaires were compared with the research question and were analyzed in depth using the qualitative descriptive analysis method.

Research limits

In selecting schools from four districts of Sri Lanka there was the need for their being diverse in terms of urban/rural and the presence of subject stream. There are no 1AB rural schools in the Polonnaruwa district. The G.C.E. (A/L) science stream is taught in the Tamil medium 1C schools, school holidays are determined according to religious traditions. In these cases the fact that the number of school days are statistically equal was considered legal.

The last two pages of the school register had not been completed in 90% of the sample. Therefore, data were prepared based on the average monthly attendance of students.

Research findings

The findings of the research conducted on the patterns of school attendance of G.C.E. (A/L) students, according to the research question, is given below.

Research question 01

Are there different school attendance patterns of G.C.E. (A/L) students studying in Grades 12, 13?

Data was obtained on the number of days of school attendance for 202 days for 12 months from 56 schools for the period June 2004 to May 2005 with respect to Grade 12, and for 158 days for 11 months from June 2005 to April 2006 with respect to Grade 13 from the attendance registers where attendance had been marked. Accordingly, the monthly attendance of 890 students.

Maximum was 88.22 or 785/890 students

Minimum was 0.24 or 15/890 students

Table 2 : School Attendance of G.C.E. (A/L) student in 4 Districts
(Percentages)

District	Number of students N	Maximum attendance %	Minimum attendance N	Average attendance during years%	Number of students approximately
1. Colombo	Sin: 240	88.1	.04	44.07	106
2. Gampaha	Sin: 220	88.4	.05	44.2	194
3. Kandy	Sin: 248	85.0	2.4	43.7	269
	Tam: 92	84.8	2.4	43.6	40
4. Polonnaruwa	Sin: 85	70.0	.02	35.01	20
	Tam: 32	66.1	0.0	33.05	11

The district from which the greatest number of students who had attended school out of the 4 districts in 2 years is the Gampaha district. This was 44.2% of the student type.

The district from which the least number of students who had attended school out of the 4 districts in 2 years is the Polonnaruwa district. A lower number of Tamil medium students than Sinhala medium students had attended; school the percentage being 33.05%.

The sample from the 4 districts (N=890) attendance of male, female students and school attendance of urban, rural students, attendance of students in terms of Science, Commerce, Arts, subject streams, school attendance of students of 1AB/1C schools were calculated in terms of sub-samples. These are given Table No. No3

Table 3 : School Attendance of G.C.E. (A/L) Grades 12, 13 students
in terms of sub-samples.

Variab	Sub-sample	Attendance		X sum		% Attendance	
		N	12	13	12%	13%	Differenc
District	Colombo	240	181.5	73.1	75.62	30.45	45.17
	Gampaha	220	212.5	57.18	96.59	24.62	71.9
	Kandy	340	248.3	127.63	74.32	38.21	36.12
	Polonnaruwa	90	51.6	17.06	60	19.84	40.16
Area	Urban	644	526.6	377.2	80.5	57.64	49.5
	Rural	246	175.3	78.1	74.15	33.09	41.1
Convenience	Not difficult	800	703.4	427	87.4	53.1	34.3
	Difficult	90	61.4	17.06	60	19.81	40.16
School type	1 AB	640	483	356.2	76.6	56.5	20.1
	1 C	250	218	99.3	83.8	38.0	45.8
Subject stream	Science	236	189.4	85.7	77.4	35	42.4
	Commerce	342	273.8	79.4	80.9	23.1	56.9
	Arts	312	190.2	83.1	60.1	26.2	33.9
Gender	Male	436	258.5	103	59.2	22.6	33.9
	Femal	454	337.7	134.9	74.3	29.7	44.6
Language medium	Sinhala	766	537.1	211.5	69.9	27.5	42.4
	Tamil	124	58.9	26.4	48.2	21.6	26.6

In indicating the mean attendance of Grades 12, 13 students studying in G.C.E. (A/L) classes in the respective districts in descending order is 60.5% for Gampaha district, 56.2% for Kandy district, 53.0% for Colombo district and 39.9 for Polonnaruwa district.

When considered in terms of district school attendance of Grades 12/13 students is greater in the Gampaha district than in other districts, 80% school attendance is not indicated in any one of the 4 districts. While there is indication with respect to all the districts, that attendance in Grade 13 is less than in Grade 12, it was discovered that there is a significant drop in attendance in Grade 13 than in Grade 12 in the Gampaha district.

Urban rural differences in the school attendance

Table No. 04 below shows the patterns of attendance of 890 students from 56 schools being 25 urban and 31 rural schools belonging to 10% of the schools in the districts in 2006.

Table 4: Difference in attendance (as percentages) of Grades 12/13 in urban/ rural areas

Students	N	% of school attendance			Significance of difference
		Grade 12	Grade 13	Difference	
Urban	644	80.5%	57.6%	49.5%	
Rural	246	74.1%	33.0%	41.1%	12.63

Significant at P.<.01 level

The school attendance of urban students in Grades 12 and 13 is greater than that of rural students by 8.4%.

Differences in school attendance patterns with respect to difficult and not difficult areas

While 3 of the 4 districts in the sample are not difficult areas, the district that is considered difficult, is the Polonnaruwa district. (Review report of the National Education Commission Dec. 2003, page 119).

Table 5: School attendance (percentage) of Grades 12/13 students in difficult and not difficult districts

District	N	% of school attendance			Significance of difference
		Grade 12	Grade 13	Difference	
Non-difficult districts	800	87.4%	53.1%	20.1%	
Difficult districts	90	51.1%	19.8%	31.8%	22.95

Significant at $P < .01$ level

While indicating a greater percentage value of school attendance of Grade 12 students of type 1AB schools a lower value is indicated in Grade 13. While attendance in Grade 12 of 1C schools was greater than in 1AB schools, it was discovered that attendance in Grade 13 was also lower than in 1AB schools.

Table 6: percentage of School attendance of Grade 12/13 Students in term of school Type

School type	No. of students	% of school attendance			Significance Z of difference
		Grade 12	Grade 13	Difference	
1 AB	640	76.6%	56.5%	20.1%	7.67
1 C	250	83.8%	38.0%	45.8%	

Significant at $P < .01$ level

Differences in school attendance of G.C.E. (A/L) students in terms of Science, subject streams

Table 7: Percentage of school attendance of Grade 12/13 G.C.E. (A/L) students in terms of subject stream

Subject stream	No. of students	School attendance			Subject stream	Significance of difference
		Grade 12	Grade 13	Difference		
Science	236	77.4%	35%	42.4%	Science & Commerce	Not Significant
Commerce	342	79.4%	23.1%	56.3%	Science & Arts	Significant
Arts	312	60.1%	26.2%	33.9%	Commerce & Arts	Significant

Significant at difference $P < .01$ level

School attendance of Commerce students is greater compared to the other subjects. Attendance of Grade 12 and 13 Arts students is low compared to other subjects. It has been revealed that school attendance of G.C.E. (A/L) Science students is high compared to Commerce and Arts subjects.

School attendance (percentage) of G.C.E. (A/L) students according to gender

Table No. 08 gives data on school attendance of Grades 12/13 students in terms of gender of 890 G.C.E. (A/L) students.

Table 08: School attendance (percentage) of G.C.E (A/L) Students in Grades 12/12 in terms of gender

Gender	No of Students	% of School attendande			Significance z of difference
		Grade12	Grade 13	difference	
Male	436	59.2%	22.6%	36.6%	
Female	454	74.3%	29.7%	44.6%	17.23

In both, Grades 12 and 13 attendance of female students is greater than that of male students. Difference is significant at $P < .05$ level.

Differences in school attendance patterns of G.C.E. (A/L) students in terms of medium

In this instance the attendance of students in the districts of Kandy and Polonnaruwa appearing for their G.C.E. (A/L) examination in the Sinhala and Tamil medium, was investigated. Here, while the school attendance figures of Sinhala medium students in 4 districts and Tamil medium students in 2 districts was taken into consideration, the related data are given in Table No.9

Table 09: Percentage of school attendance of Grades 12 and 13 G.C.E. (A/L) students

Medium	No.of students	% of school attendance			Significance Z of Difference
		Grade 12	Grade 13	Difference	
Sinhala	768	69.9%	27.5%	42.4%	
Tamil	122	48.2%	21.6%	26.6%	15.2

Is significantly different at $P < .05$ level

It has been revealed that the percentage of school attendance of Tamil medium students is lower than that of Sinhala medium student The difference in the School attendance of student receiving education in the Sinhala medium and those receiving education in the Tamil medium is Significant at $P < 0.5$ level.

Research question No 2

Are there differences in the school attendance patterns of G.C.E. (A/L) Students when considered specifically in terms of district, rural/Urban State, gender and Subject Stream?

School attendance in Grade 12 from June 2004 to June 2005 and from June 2005 to April 2006 in Grade 13 in terms of males and females as well as in terms of Subject stream was Computed for the districts of Colombo, Gampaha, Kandy and Polonnaruwa. Irrespective of School type; taking only the gender of students as the Criteria, the findings of the analysis relevant to research question No 2 were presented. The relevant data are presented in table No : 10

Table No 10 : Percentage of mean attendance of students (in Grade 12 and 13) in terms of gender in the 4 districts

Dis	Gen.	Colombo district				Gampaha district				Kandy district				Polonnaruwa district			
		Male		Female		Male		Female		Male		Female		Male		Female	
		U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R
Ur. Ru Ru	Sc.	49.9	51.2	58.0	62.5	57.2	54.0	72.5	64.5	62.7	58.7	55.0	-	36.2	-	-	-
	Com	54.8	52.8	48.9	47.0	60.5	55.8	51.6	70.0	44.5	40.1	57.9	-	-	-	-	-
	Art	54.5	51.2	43.3	57.5	50.0	-	-	-	-	-	-	-	-	-	-	-
	Art	55.2	45.5	49.1	45.9	43.2	50.5	54.5	53.1	50.9	52.2	51.6	40.0	53.1	42.5	-	-
	Sc	-	-	-	-	-	55.0	67.5	41.2	46.2	23.7	-	-	-	-	-	-
	Com	-	-	-	-	-	65.0	53.0	50.0	60.0	41.2	42.5	46.0	-	-	-	-
	Art.	-	-	-	-	-	48.2	52.5	54.3	52.1	25.0	0.8	31.0	31.2	-	-	-

According to Table No. 10,

Colombo District

- According to percentage values the school attendance of rural female students is quantitatively greater than that of urban female students. In urban/rural terms the school attendance of female students is greater than that of male students.
- Of the students who followed the Commerce stream the percentage value of school attendance of male urban and rural students is greater than that of female students.
- Of the students who followed the Art stream the percentage value of school attendance of urban male and female students is greater than that of rural students.

Gampaha district

- The percentage value of attendance of rural female students who followed the Science stream is greater than that of other students.
- The percentage value of attendance of rural female students who followed the Commerce stream is greater than that of other students.
- The percentage value of attendance of urban male students who followed the Arts stream is comparatively lower than that of other students who followed the 3 subject streams.

Kandy district (Sinhala medium Students)

- Students in the Kandy district who followed the Science stream have come to school a greater number of days than those who followed other subject streams.
- A low percentage value of school attendance of Commerce students.
- The order of the volumes of school attendance between male and female students is different according to subject stream.

- A greater percentage value with respect to school attendance has been obtained by male Science, Arts and Commerce students and by female Science, Arts and Commerce students.

Kandy district (Tamil medium students)

- The percentage values of school attendance of rural male students who followed Science subjects is greater than that of other students, according to data. The school attendance of urban female students who belonged to the Science stream is greater than that of all other students.
- The percentage values of school attendance of urban male students and rural female students is greater than those of all other students.
- A greater value of school attendance is shown by urban female students and rural male students who followed the Arts stream.

Polonnaruwa district (Sinhala medium Students)

- There is a difference of 18.8% between urban male and female students who followed the Science stream, with respect to school attendance. The attendance of female students is less than that of male students.
- The Science stream is not taught in rural schools.
- The school attendance of urban male and female students following the Commerce stream is greater than that of male students.
- The percentage value of school attendance of urban/rural female students following the Arts stream is greater than that of male students.
- With respect to all subject areas, the school attendance of female students is greater than that of male students.

Polonnaruwa district (Tamil medium Students)

- The school attendance of G.C.E. (A/L) rural Tamil Medium in the Polonnaruwa district is greater than that of urban students.
- It was also found that there were few schools where the Science subject streams were taught.

Research question No. 3

Are there significant differences in the school attendance patterns of G.C.E. (A/L) students in terms of school type (1AB/1C) rural/urban state and gender within the district?

The significant nature of attendance in terms of school type 1AB/1C and urban/rural state, was discovered. Language medium is not taken into consideration here. Findings obtained as percentage, taking all 4 districts into consideration are given in Table No. 11

Table 11 : District totals of school attendance (percentage) in terms of gender, school type 1AB/1C and urban/rural state

Regional difference	Gender	N	Grade 12 \bar{X} %	Grade 13 \bar{X} %	Grade difference %	Annual %
1 AB Urban	Male	244	79.3	36.6	42.4	57.8
1 AB Urban	Female	242	75.4	35.3	40.1	55.3
1 AB Rural	Male	66	66.9	30.8	36.1	35.3
1 AB Rural	Female	96	70.6	34.2	36.4	52.4
1 C Urban	Male	74	84.7	65.6	19.1	75.1
1 C Urban	Female	82	71.4	32.6	38.8	52.0
1 C Rural	Male	46	46.6	21.1	25.5	33.8
1 C Rural	Female	62	65.0	25.0	40.0	45.0

According to Table No. 11,

It is seen that within the two years there is a maximum average male attendance of 75.1 in 1C urban schools and a minimum average male attendance of 33.8 in 1C schools.

Colombo district

- Attendance of 90 Grades 12/13 urban male students shows a mean of 49.8%.
- Attendance of 96 Grades 12/13 female students shows a mean of 49.8%.
- Attendance of 24 Grades 12/13 rural male students shows a mean of 50.65%.
- Attendance of 24 Grades 12/13 rural female students shows a mean of 59.74%.
- The school attendance of rural female students has been shown to be greater than that of urban students and rural male students.

Gampaha district

- The mean attendance of 84 Grade 12/13 urban male students is 51.8%
- The mean attendance of 94 Grade 12/13 urban female students is 49.7%
- The mean attendance of 20 Grade 12/13 rural male students is 51.7%
- The mean attendance of 22 Grade 12/13 rural female students is 76%
- It has been shown that the attendance of rural female students is greater than that of urban students and that of rural male students.

Kandy district (Sinhala medium)

- The mean attendance of 96 Grade 12/13 urban male students is 54.6%
- The mean attendance of 90 Grade 12/13 urban female students is 58.9%
- The mean attendance of 28 Grade 12/13 rural male students is 54.9%
- The mean attendance of 34 Grade 12/13 rural female students is 55.6%
- The mean percentage of school attendance of G.C.E. (A/L) is distributed between and 58.9%. No considerable difference is evident.

Kandy district (Tamil medium)

- The mean attendance of 24 Grade 12/13 urban male students is 47.8%
- The mean attendance of 24 Grade 12/13 urban female students is 64.3%
- The mean attendance of 20 Grade 12/13 rural male students is 53.6%
- The mean attendance of 24 Grade 12/13 rural female students is 53.2%
- The mean attendance of Tamil medium urban female students is greater than that of others.

Polonnaruwa district (Sinhala medium)

- The mean attendance of 18 Grade 12/13 urban male students is 49.5%
- The mean attendance of 16 Grade 12/13 urban female students is 50.6%
- The mean attendance of 10 Grade 12/13 rural male students is 48.8%
- The mean attendance of 14 Grade 12/13 rural female students is 58.1%
- The percentage of school attendance of urban and rural female students is greater than that of urban and rural male students.

Polonnaruwa district (Tamil medium)

- The mean attendance of 10 Grade 12/13 urban male students is 38%
- The mean attendance of 08 Grade 12/13 urban female students is 37%
- The mean attendance of 08 Grade 12/13 rural male students is 41.1%
- The mean attendance of 06 Grade 12/13 rural female students is 42%
- The percentage of school attendance of rural male/female students is greater than that of urban male/female students.

The school attendance of G.C.E. (A/L) students in the districts of Colombo, Gampaha, Kandy and Polonnaruwa is low. It is evident that the lowest school attendance is that of Tamil Medium students in the Polonnaruwa district.

Research question No. 4

Have the medium of instruction and subject stream, influenced attitudinal change with respect to school attendance of G.C.E. (A/L) students?

Analysis of data from Question No. 4 onwards is presented based on the response data to the 30 item questionnaire presented to G.C.E. (A/L) students. Response data are given in Table No. 12. Responses received on the five point scale,

- Strongly disagree
- Disagree
- Medium
- Agree
- Strongly agree

from 445 students were computed as 4 percentage of the sample. Single sub-samples were analyzed through the Chi square significance test and the significance between sub-samples was found using the Chi square test for independent samples.

As shown at the beginning, attitude analysis was carried out by separating the responses given to questions belonging to each area in the questionnaire prepared for 9 areas related to school attendance, and analyzing data.

While interviews were conducted in order to implement in-depth the attitude test carried out through the questionnaire, the sample that participated in it is given in Table No. 12.

Table 12 : Sample Used in the interview

Type	Proposed	Number participated	Percentage
Principals	25	20	80%
School teachers	60	52	86.6%
Tuition teachers	20	05	75%
Parents	40	31	77.5%

Table No 13: Total of attitude responses given to items in questionnaire
Entire student sample = N=445

No.	Tamil 62			Sinhala 383			Total (Sinhala/Tamil)		
	Disag.	Med.	Agree	Disag.	Med.	Agree	Disag.	Med.	Agree
1	16	11	35	50	118	215	66	129	250
2	09	11	42	5-3	81	248	62	92	293
3	04	03	55	11	35	337	15	35	392
4	-	04	58	97	89	197	97	93	255
5	13	10	39	38	73	272	51	83	311
6	07	09	47	80	63	239	81	70	286
7	15	12	35	125	108	150	140	120	185
8	07	09	46	52	68	263	59	77	309
9	02	10	50	159	55	169	161	65	219
10	04	06	52	111	76	188	115	82	240
11	-	08	54	254	75	54	254	83	108
12	11	10	41	39	59	285	50	69	326
13	10	17	35	54	64	265	64	81	300
14	04	13	45	38	46	299	42	59	344
15	28	07	27	176	107	100	204	114	127
16	18	12	32	137	130	116	154	142	149
17	10	20	29	86	139	148	96	159	177
18	12	08	42	39	63	182	51	71	323
19	09	09	40	82	77	212	91	86	252
20	20	07	35	153	120	95	73	127	130
21	17	18	27	109	67	207	126	85	234
22	27	19	16	135	134	114	162	153	130
23	21	16	25	154	57	172	17	573	197
24	07	23	28	175	110	88	182	143	116
25	05	22	35	113	86	184	118	108	219
26	10	21	28	176	81	115-11	186	102	143
27	21	21	20	175	68	134	196	89	154
28	48	02	12	328	26	29	376	28	41
29	15	10	37	28	44	311	33	54	148
30	41	05	16	169	129	48	210	134	73

Table 14 : Attitude response significances related to the school attendance of G.C.E. (A/L) students in terms of Sinhala/Tamil media, between subject stream (Science, Commerce, Arts) according to \bar{X}^2 test

Variable (related item in the Questionnaire)		Sinhala Medium		Tamil Medium	
Schools Attendance	1	2.367	P0.05	15.69	+
	7	34.05	+	5.087	0.05
	13	3.34	0.01	10.53	0.01
	15	37.20	+	12.06	+
	20	27.78	+	14.53	0.05
	24	14.16	+	6.42	0.05
Subject Syllabus	8	34.15	+	7.381	0.05
	19	21.91	+	3.02	0.05
	27	37.6	+	0.077	0.05
Exam Needs	6	31.94	+	2.494	0.05
	9	37.05	+	6.91	0.05
	17	40.29	+	4.442	0.05
	26	22.23	+	1.959	0.05
School Teachers	30	119.62	+	1.93	0.05
	3	15.21	+	2.02	0.05
	5	16.95	+	2.96	0.05
Tuition Teachers	11	11.45	0.01	1.641	0.05
	14	89.07	+	2.36	0.05
	16	19.74	+	2.285	0.05
	18	48.96	+	14.16	+
	22	45.25	+	15.54	+
Principal Role	29	14.005	+	2.731	0.05
	12	23.4	+	1.492	0.05
	18	14.52	+	1.057	0.05
Parental influence	23	9.08	0.05	0.91	0.05
Peer influence	10	13.598	+	1.233	0.05
Gender influence	25	16.57	+	1.29	0.05
Future Expectations	2	4.53	0.5	1.601	0.05
4	55.73	+	0.783	0.05	
Difference					

Significant

Note

+ Significant at df = 4

0.05 - Not Significant at df = 4 (0.05) = 9.4)

0.01 - Not Significant at df = (p(0.01) = 13.3)

not Significant

(** P<0.01, P<0.05)

The findings on attitudes got from the questionnaire was analyzed quantitatively with respect to the response for each item in it with the information got from the interviews with the individuals above.

Student responses “Strongly Disagree” and “Disagree” in one cell, “Medium” in one cell “Agree”, “Strongly Agree”, total students responses and Sinhala/Tamil are given in Table No. 13. Significance between results got from the test regarding attitudes of students learning Science, Commerce, Arts subject streams is given at the bottom of Table No. 14. Student attitudes have been revealed in terms of the significance of responses with respect to each item.

Students have indicated their agreement with:

- | | | |
|-------------|---|--|
| Item No. 01 | - | Adequacy of what is being taught in school |
| No. 13 | - | Adequacy of the knowledge received from the school library to answer a common question paper on General Knowledge. |

Given below are attitudes to which Sinhala Medium students have disagreed with respect to attitudes related to School Attendance.

- That welfare matters like school uniforms have an influence on School Attendance.
- That one does not attend school daily because time is wasted on extra curricular matters.
- That one is in agreement with paying fees to learn in G.C.E. (A/L) class at school.
- The need for 80% attendance of school for G.C.E. (A/L) applications to be sent.

Research question No. 5

Is the school attendance pattern of G.C.E. (A/L) students influenced by their teachers (school/tuition) and school principal?

Eleven questions were set apart in the questionnaire to discover attitudes regarding the influence of teachers and principals in the creation of various patterns of school attendance. The only attitude that is agreed by Sinhala medium Student is;

The only attitude that is agreed by Sinhala medium student is;

- That teachers teaching in the class complete the syllabus in the tuition class

Attitude that disagreed are;

- Teachers teaching the subject attend school every day and teach well.
- That possible questions are discussed in the class and students are made to write out the answers in class.
- That it is possible to confirm knowledge once again in the tuition class.
- That, since tuition classes are conducted during school hours, it is difficult to learn in school.
- That, since school teachers are sent on transfer midway, the short-comings are completed through tuition classes.
- That they attend school daily and attend tuition classes on weekends.
- That permission to sit the exam is not given if one does not put in 80% attendance.
- That there is no obstruction from the school for one to attend tuition classes once the attendance register had been marked.

Research question No. 6

Are the school attendance patterns of G.C.E. (A/L) students influenced by parents, peers and the opposite sex?

Students on all three subject streams have expressed agreement with the position that parents do take the stand that their children should necessarily pass that examination rather than attend school. This is an agreement significant at $P < 0.05$ level. It was revealed that 100% Sinhala medium students attend tuition

classes, that they spend, on average, 15-21 hours a week in tuition classes and that the participation of urban students is greater than that of rural students. It was possible to discover the amount of time spent on additional classes, through the questionnaire. Accordingly, one attitudinal facet of students was revealed.

With respect to the Research question above, 30.6% Tamil medium students do not attend tuition classes. Disagreeing attitudes are as follows.

- One attends school for the pleasure of studying alongside friends in joy, thus personality development is facilitated.
- That one attends tuition classes because of the freedom it provides to maintain friendship with friends (of both sexes).

Research question No. 7

Does national education policy influence the school attendance of G.C.E. (A/L) students?

Circulars require 80% attendance as mandatory for a student to be eligible to sit the G.C.E. (A/L) examination. Yet the average required attendance out of 890 students from Colombo, Gampaha, Kandy and Polonnaruwa districts for 2 years (or 23 months) was completed only by 36 students. The others had not attended school daily.

Although circulars maintain that principals should be concerned about 80% attendance, there is no punishment indicated for those who violate this requirement. There is no room for disciplinary action. Many are the instances, at present, where legal steps are taken in situations of violation of human rights. During interviews ideas regarding the need for the immediate implementation of plans for the eradication of reasons for failure to attend school as a national practice in Sri Lankan society, were raised.

Research question No. 8

What are the steps that could be taken to improve the school attendance of G.C.E. (A/L) students?

In considering the total of the average numbers of attendance of N=890 students, there is a drop from 88.2% to 2.4%. When the number of students is considered maximum there is a drop from a maximum N=785/890 to a minimum N=15/890.

Muslim girls in Tamil medium schools do not attend tuition classes. It was suggested that Education Policy should be formulated to suit the future expectations of students. According to the findings on Attitudes from the Questionnaire.

- Students accept that they should attend school daily.
- There is no agreement regarding increasing the Z score somehow or other and entering university. There is greater consensus on the creation of new areas for future advancement after G.C.E. (A/L)s.
- New policies should be developed for the provision of opportunities in institutions acceptable to me, just as in universities.

Research Findings

The following findings were the outcome of the present research conducted on the school attendance patterns of G.C.E. (A/L) students.

- The school attendance of Grade 13 G.C.E. (A/L) students is less than that of Grade 12 G.C.E. (A/L) students with respect to variables of gender, subject stream, school type, urban/rural, difficult and not difficult district and language medium.
- School attendance drops to zero as the G.C.E. (A/L) examination approaches.
- Although 80% attendance (The requirement) compulsory for applications for the G.C.E. (A/L) to be made) had been fulfilled by only 28% of the students.

- The percentage of the average of school attendance of Grades 12 and 13 students varied according to district. This was 53% in Colombo, 56.26% in Kandy, 66.6% in Gampaha and 39.92% in Polonnaruwa.
- Attendance of urban students was greater than that of rural students by 17.86%
- Average attendance in 1AB schools was greater than the attendance in rural 1AB/1C schools.
- School attendance of Grade 12 Commerce students and Grade 13 Science students is greater than that of Arts students.
- Attendance of girls is greater than the attendance of boys by 11.1%.
- Attendance of Sinhala medium students is greater by 13.8% than that of Tamil medium students.
- 100% Sinhala medium students attend tuition classes.
- 67% Tamil medium students obtain tuition.

Responses to the questionnaire have been confirmed by the findings revealed at interviews.

The suggestions below, framed by matching interviews and free idea responses might be forwarded for the purpose of making an attempt at increasing the school attendance of G.C.E. (A/L) students. Factors that can be inferred as the reasons for the drop in school attendance have been confirmed by attitude responses and interviews.

Suggestions

Since it has been revealed that the school attendance of G.C.E. (A/L) students is extremely low the suggestions below, based on the present Research and conclusions, have been put forward.

- A friendly Guidance and Counseling service should be established in the school to help students select the G.C.E. (A/L) subject stream and resolve problem situations within the school.

- Since dependence on supplementary teaching and dissatisfaction with school teachers has had an influence on absence from school, there is need for teachers to implement a methodology to increase school attendance of students.
- While the syllabus of G.C.E. (A/L) subject streams should be revised in keeping with the demands of the times, greater quantities of the necessary class texts, teacher handbooks and additional reading materials should be printed.
- The diversification of curricula to facilitate pursuit of technical courses through higher education as well as the introduction courses that facilitate entry to the global field of learning should be implemented so as to ensure that the target of the G.C.E. (A/L) examination is not necessary the university.
- Just as is the case with science subjects, practical activities should be included with respect to other subject streams and marks added.
- Provision of opportunities, both local as well as foreign, for the acquisition of qualifications (Degrees) to teach English as a subject in schools and the provision of text book on various subjects to G.C.E. (A/L) students.
- There is need to inculcate in teachers the methodology of perceiving the physical as well as mental problems of G.C.E. (A/L) students with compassion and the implementation of such sentiments in school.
- Since the maintenance of student attendance registers up to date is a part of the teaching profession, there is need for the implementation of a methodology to supervise that function.

Since the increase of co-curricular activities tend to discourage the school attendance of students, it would be prudent if the workload involved in this regard is trimmed by 2/3 and assigned to students.

- There should be equity in the provision of lab facilities and the necessary resources, both physical and human to both urban and rural schools.
- Social relation between the parents of G.C.E. (A/L) students and the school authorities should be increased with a view to ensuring the security of these students.

- Instead of having all the subject taught in the same 1AB/1C schools, there is need for the establishment of separate schools in terms of subject stream in order to overcome the shortage of teachers in the Tamil medium and in rural schools.
- There is urgent need for the Minister of Education to institute a mechanism to investigate into the activities of private tutorships where there is a glaring lack of subject proficiency, professionalism and are hot-beds of indiscipline blatantly flouting all established codes of decorum and concern, not to mention commitment for student welfare.

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Thesis Abstract

A study of teacher attitudes in relation to teaching mathematics in secondary level grades

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Abstract of the thesis Submitted to the National Institute of Education, for Master of Education Degree (2005), Maharagama.

Mathematics is considered to be a difficult subject by most of the students in our contexts. One reason could be the abstract nature of the subject. The students who can digest these abstract concepts are considered to be the “cream” of a class. As a result of the year five scholarship examination, the “cream” get the chance of learning in Prestigious Schools. Students who are remaining in rural schools are considered to be weaker in terms of achievement by teachers. Thus, in the teachers’ community, there is an attitude that no point in doing committed and dedicated work with those remaining students. Moreover, empirical evidence in the literature to suggest that there is a very high level of correlation between, teacher attitudes and student achievement levels. However, there is a lesser number of research carried out in this area, in Sri Lanka. The center focus of the study is to understand the nature of the teachers’ attitudes, making gender wise and professional qualification wise comparisons.

The sample of the study consists of 125 teachers, representing (trained teachers, trained graduates, and National College of Education Diploma teachers). Selected from two educational zones of the Colombo district.

The main data collecting instrument was a Likert type attitude scale consisting of 25 statements belonging of five themes. These five themes are importance and nature of the subject, teachers' attitudes regarding knowledge of the subject and motivation, teaching methods, curricular materials, and pupils' texts, competency level of student and motivation. Each statement was made according to a scale where '1' representing 'not at all true' and '5' representing 'very true'. The development of the instrument was started with an interview conducted with 10 teachers, teaching mathematics in secondary level grades. Having analyzed the interview data, the researcher was able to identify five themes that cut a cross the data set. These identified themes were then used for making 25 statements. After a pilot test, necessary corrections in the scale were carried out. The final version of the instrument consists of two parts where first part had questions regarding teachers demographic details. The second part consists of 25 statements made according to Likert type scale, grouped under the five themes.

According to the data analysis teachers have shown 60% favorable attitude overall. The highest percentage was observed in the theme "teachers' attitudes regarding knowledge of the subject and motivation". There was a significant attitudinal difference according to gender and the teachers professional qualification. Teachers possessing National College of Education had significantly higher favorable attitude than trained teachers and trained graduate teachers.

According to the finding of the study it was suggested that the teacher recruitment should be done after pre-service training. This pre-service training can be given at the National College of Educations. It was also suggested that National College of Educations curriculum should be amended in such a manner that it make room for student teachers attitudinal change.

BOOK REVIEW

FACETS OF SRI LANKAN EDUCATION

Prof. S. Sandarasegaram and Dr. M. Karunanithy

Kumaran Book House Publication, Colombo & Chennai

‘Facets of Sri Lankan Education’ by Prof. Sandarasegaram and Dr. Karunanithy provides valuable insights into different aspects of education in general and facets of Sri Lankan education in particular. The book contains 14 chapters with the first six addressing aspects of education such as *Education and Social Transformation* and *Bureaucracy in Education*. The authors, Professor S. Sandarasegaram, Dean of the Faculty of Education, University of Colombo and Dr. Karunanithy, Director, *National Education Research and Evaluation Center (NEREC)*, display the vast experience they have in the field of education in every chapter. With years of research experience, the authors discuss several key issues arising from the educational sector in Sri Lanka from chapter seven to chapter twelve. Although the last two chapters specifically deal with educational problems in South Asia and the Third World, the bulk of them present a graphic account of how poverty settles in on account of former colonial policies and the current practices of multilateral organizations. The authors then go on to analyze the impact of poverty on education and well-being of the disadvantaged groups in such regions.

Chapter one concerns the role of education where schools at present are expected to depart from their conservative role in transmitting relatively static, cultural and traditional knowledge and skills. Instead, what is expected from schools today is that they should become agents of social transformation and reform, building a new social order which is capable of taking up challenging and innovative tasks in the process of development. The authors, however, are cautious that an expansion of educational facilities alone will not produce a workforce capable of taking up demanding jobs in the present global context. While expansion of education can increase upward social mobility, the inability to foresee probable excess of educated youth can result in either unemployment or under employment as witnessed during the 1970s. In educational terminology this is

known as devaluation of educational currency. The authors therefore highlight the importance of linking policy implementation in education with proper development agendas where educated youth could be utilized effectively.

While in chapter two the authors further discuss the all important question of *Education and Economic Development*, chapter three focuses on education's role in human resource development. Attention is centered around the present notions of education which do not conform to the principles of traditional human resource development theorists who view education only in economic terms.

In chapter four, the authors show how bureaucracy can limit more participation of teachers and students in decision making drawing examples from Norway and Sweden where decentralization of education has given more powers to teachers and students. In chapter five, the authors draw our attention to the importance of integrating research into teaching by university academics while highlighting the advantages of the concept of open learning for marginalized groups in chapter six. It is particularly crucial for the academic community in universities, according to the authors, to engage themselves in research so that they will be required to use methodologies pertaining to their disciplines. This will not only provide them with an opportunity to incorporate recently established knowledge in their fields into various aspects of their specific research in particular but also to contribute to the research profile of the institutes which they represent in general.

The book contains a very comprehensive account of the skills and the particular type of knowledge required in an ever-changing global labor market and how educational institutes in Sri Lanka should train personnel for such an environment. Though the book does not contain a separate chapter on globalization and education, much of the analysis of the educational reforms and policies is presented from a theoretical framework of globalization entering the educational sector. In fact, training of individuals with skills required to operate in a global labor market as opposed to producing individuals with traditional knowledge is termed as competitiveness-driven reforms. The authors have discussed such matters quite adequately. They have also presented critical thoughts on improving teacher education and its relevance to an era of knowledge economy. What is of even more significance is the book's chapters on education for disadvantaged communities with a special focus on the recent trends in the education of Indian minorities in Sri Lanka. Researchers looking for specific

details and statistics related to the education of Indian minorities will find ample information and data for their specific studies in these chapters.

The book, as the authors have acknowledged in its preface, contains an assortment of articles written at various times on various issues in education and, therefore, seems to lack continuity. Furthermore, although the title introduces the book as 'Facets of Sri Lankan Education', it contains articles on aspects of Education which are not necessarily 'Facets of Sri Lankan Education'. Nevertheless, the book is of tremendous value not only for the foreign researcher who is in search of recently published books in English on educational developments in a developing country like Sri Lanka but also the undergraduate as well as the postgraduate student engaged in educational studies in English medium.

Yet another attractive feature of the book is its appendices. These provide statistics of schools and students related to various themes ranging from subjects learnt at school to student performances and test results. Looking for statistics and specific details while engaged in research is an arduous task for the young researcher. The authors have made this task much easier for both the student and the researcher by carefully selecting data which are often looked for and given them in tabular forms.

The book is written in simple yet delightful language which makes the reader want to continue reading. Despite few tables which produce quantitative data, all articles are descriptive presentations of various aspects of education. Thus the narrative style of the book is quite enjoyable. Kumaran Book House should be commended for sponsoring this publication which is an invaluable and timely requirement for those engaged in current educational studies with a special focus on educational matters pertaining to Sri Lanka.

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