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Research Report

Establishing Baseline for the 2017 Revised Road Safety Education Module for Primary School through Context, Input, Process and Product (CIPP) Model



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MALAYSIAN INSTITUTE OF ROAD SAFETY RESEARCH

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This integrated report highlights the study conducted as part of the Project of Review and Redevelop of RSE module for primary school lead by MIROS. This study is cooperation between UPM and MIROS. A grant awarded by MIROS to UPM is for a study on the Context, Input and Process components of the model. On the other hand, Road User Behavioral Change Research Center (RUBC) of MIROS is responsible for the study on the product component of the model. Research Management Compliance (RMC) of MIROS plays the role in monitoring the process of the study and of the integrated report. Both UPM and MIROS contributed their inputs and contents for the integrated report and submitted the final report to MIROS for approval before publication.

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The authors hope that this integrated report can provide inputs of the 10 years RSE implementations in all primary schools nationwide. These inputs establish the baseline for the Revised Road Safety Education Module for Primary School 2017 through Context, Input, Process and Product (CIPP) Model.

Abstract

Road Safety Education in Malaysia as a part of formal curriculum has been implemented in stages since 10 years ago. In 2015, Malaysian Institute of Road Safety Research (MIROS) has conducted a study on Review of RSE Module for Primary and Secondary School. The findings of the study have initiated Road Safety Department Malaysia (RSD) to propose for an allocation to revise and redevelop the RSE Module. MIROS was given the honor to carry out the project of Review and Redevelopment of RSE Module for Primary and Secondary schools besides develop the teachers' guide on RSE for the nursery and pre-schools using the allocation given to RSD. The final manuscript of the revised RSE module for primary students was produced and used in the 24 primary schools selected for pilot study.

A study to establish the baseline for the Revised Road Safety Education Modules for Primary School 2017 through Context, Input, and Process and Product (CIPP) Model is needed to determine the level of knowledge and skill about road safety among the primary school students because RSE has been nationwide implemented since 2007. This integrated report encompasses the findings of the Context, Input, Process and Product (CIPP) study that is an improvement-oriented approach. It is to generate the baseline in terms of the readiness of school, teachers and student, road safety knowledge and behaviour among the students, and the spill over effects from students on parents for the pilot study of the revised RSE modules in the 24 selected primary schools in Malaysia.

The contextual study established the baseline, which is actually the status of schools' facilities, road safety clubs and activities that supports the implementation of the previous RSE modules in primary schools as of end of the year 2016 since its commencement in the year 2007. The outcome from comparing the baseline with the post-study of the pilot revised RSE program helps to assess the hypothesis that

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availability of the internet access and the other supporting facilities enhance the teaching delivery by teachers and learning process of students on the revised RSE modules. Currently, of the 24 pilot schools, 83% of schools have computer laboratory and 79% have internet access, 83% have LCD screen and 71% have LCD projector.

As of end of the year 2016, only 21% of the pilot schools have road safety clubs that are still active (club members are students from Year 4, 5 and 6 only). Apart from that, only 4% of schools have had road safety activities or talks, and only 4% have road safety corners that exhibit road safety materials at the notice boards. As such, the post-study will seek to measure if the availability or enhancement of road safety activities, clubs, and road safety corners create awareness and knowledge input to both teachers and students.

With regard to facilities outside the school compound, the established baseline is the availability of the School Traffic Warden Program. As of the end of the year 2016, such program is not available in all 24 schools. Taking into account that this program is important to boost student's appreciation and knowledge in road safety, a post study will seek to identify if any of the schools have implemented the program in 2017.

In the Input-Process component study relating the initial perception of Bahasa Melayu (BM) teachers on the implementation of RSE in primary schools, it was found that 85% of them rated 9 out of 10 for their overall opinion on the need of RSE program in schools. This established baseline represents their perception from experience of teaching the previous RSE modules. The development of instruments in the post study will objectively measure the improvement in teacher's perception of the revised RSE module by comparing to the pre-study questionnaires.

The baseline of the product component were established based on three aspects, that is, the road safety knowledge, the behaviour of the student, and the spill over effect from students to parents. As for the behaviour, the findings revealed that less than 50% of the students from pre-school, Year 1, Year 2 and Year 3 stated "always"

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on three out of six positive road safety behaviour item. However, the percentage of students stated “always” in item “hold adults’ hand when crossing street” is high which is more than 60%. As for students of Year 4 and Year 5, less than 40% of the students stated “always” on four out of six positive behaviours item. All the above findings are prevalent in both urban and rural areas.

Besides that, the findings further illustrated that majority of students from pre-school until Year 5 are still not aware on the importance of wearing bright clothes to enhance their visibility and walking facing the traffic along the street. For the students of pre-school, Year 2 and Year 3, they are also not aware of the needs to wave at the drivers before crossing the street. At the same time, very few of the Year 4 and Year 5 students have used the service of lollipop man, this finding can be explained as the findings of the contextual component reported that very few schools have traffic warden programs.

The baseline on road safety knowledge from pre-school to Year 5 has been established. The different cut off score on road safety knowledge for each year was obtained and will be compared with the score in the post stage of the study. As for the pre-school students, 57.9% of them failed to answer correctly any of the questions provided which is relatable as pre-school students has not expose to road safety education. The cut off score for Year 1 students is at the score of 4 where only 11.7% of the students have obtained this score. For Year 2 students, the cut off score is at the score of 9 with 13.0% of them got this score. Meanwhile, the Year 3 students demonstrated a cut off score of 10 with 21% of them achieved this score. 7 is the cut off score for students of Year 4, 10.1% of them possess this score. Lastly, for students of Year 5, the cut off score is 13 and 12% of them hold this score.

Besides that, the study used Willingness to pay (WTP) as the indication for the spill over effect from students on parents. The protective category of Family Communication Pattern contributed a mean WTP of RM919.41. Whereas, consensual category reported RM1,364.25 as the mean WTP. As for Laissez-faire category, the mean WTP is RM1,541.80. The mean WTP of pluralistic category is RM19,582.20. On the other hand, the baseline for the parent-child initiation

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discussion on the topic of safety equipment, road safety regulations and road safety experience/views were established. The students of pre-school until Year 5 reported the highest percentage that is more than 60% on the topic of road safety experience/views.

A positive change for the baseline for all the components is expected as the modules have been revised due to the change of curriculum from the New Primary School Curriculum (KBSR) to Standard Based Curriculum for Primary Schools (KSSR). Besides that, the modules also have been amended in a few aspects, namely the theme, contents, activities, teaching aids and parents' involvement.

1. Introduction

Road traffic injuries are the second-leading cause of death worldwide among children aged 5–14 years and young people aged 15–29 years (WHO, 2004). Various strategies and initiatives have been taken to reduce road traffic fatalities with countries worldwide committed to a decade of action in reducing these fatalities. The Malaysian government is also committed to reducing road traffic fatalities. The Malaysian Road Safety Plan 2006–2010 was developed to achieve this target with one of its strategies being road safety education for students.

Road Safety Education (RSE) programs are meant to inculcate road safety practices in students. RSE is a life-long learning process and should begin as early as primary school level (Road Safety Department, 2006), hence the importance of integrating it into Malaysia's education system. It teaches road safety topics and practices throughout the entire school life of a child from primary school level until the end of secondary school so that it can become part of the habitual practices in every child. Furthermore, it also aims to inculcate understanding not only among the children but also among parents about the danger of being on the road and how to become a better road user by practising appropriate road safety behaviour.

The historical footsteps of RSE in the Malaysian school system began when the Road Safety Department (RSD) under the purview of Ministry of Transport, together with the cooperation of the Ministry of Education agreed for a RSE pilot project in primary students of Pasir Mas, Kelantan. The programme was implemented in stages at every school and at that time was only aimed at students in Year 1, 2 and 3. The Road Safety Research Center (RSRC) of Universiti Putra Malaysia (UPM), as a pioneer in road safety research, conducted the pilot project. On the basis of the success of the pilot project, the Ministry of Education fully implemented RSE in all national-type primary and vernacular primary schools from 2008 to 2010. In this

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first phase, a group of researchers had conducted an evaluation of the effectiveness of this intervention from the perspectives of:

- i. Knowledge, attitude and practice of children
- ii. Observational study on safe practices
- iii. Health outcomes

In the second phase of RSE intervention, road safety education was introduced to secondary students in 2012. The RSE was embedded in the Bahasa Melayu (Malay Language) subject and hence is learned through the learning and teaching of Bahasa Melayu. Consequently, as the subject is classroom oriented, the teaching and learning of RSE were conducted only in the classroom with the intention to provide knowledge, instil awareness and possibly inculcate positive attitudes towards road safety practices. This phase was evaluated by a team of researchers from MIROS and UPM.

Both teams evaluated the effectiveness of the secondary module through Context, Input, Process and Product (CIPP) evaluation model. Context, Input and Process evaluations were done by MIROS. Meanwhile, the product evaluation was carried out by UPM. The effectiveness of the product elements was evaluated from three perspectives, which are:

- i. Knowledge, attitude and perceived behaviour
- ii. Observational study on safe practices
- iii. Children's influence on parents' road use behaviour

In 2014, the technical committee for the implementation of road safety education convened for a meeting and agreed to launch a review of RSE module for primary and secondary schools. This evaluation was a timely endeavour as the module has been running over a period of seven years in primary schools. Moreover, this review was an essential restructuring exercise to address the change in the Malaysian education curriculum. The Integrated Curriculum for Primary Schools and Integrated Curriculum for Secondary Schools were being revamped to the new Primary School Standard Curriculum and Secondary School Standard Curriculum. This study was

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implemented since February 2015 by MIROS. The findings of the study suggest that the RSE module and activity books that have been in use since 2007 in primary and secondary schools needs some revision in terms of the content of the activity books and skills on road safety.

1.1 Review and Development of Revised RSE 2016 in Malaysia

Taking into account of the findings from the study done by MIROS in 2015, RSD proposed for an allocation to revise and revamp the RSE module. Hence, the implementation of RSE received a boost during the tabling of the 11th Malaysia Parliament (MP). Through the allocation channelled to RSD, MIROS was given the honour to carry out the project of Review and Redevelopment of RSE Module for Primary and Secondary schools besides developing the teachers' guide on RSE for the nursery and pre-schools.

In 2016, MIROS has conducted series of workshops by involving a team of Bahasa Melayu teachers, language officers, School Improvement Specialist Coaches, Department Officers under Ministry of Education, road safety technical input panel and subject matter experts from local universities to revise and redevelop the existing RSE module for primary, secondary and pre-school students. The final manuscript of the revised RSE module for primary students was produced and will be used in the 24 primary schools selected for the pilot study.

1.2 Evaluation of Pilot Implementation of the Revised RSE in Malaysia

As of 2017, revised RSE module for primary students has been used in 24 selected primary school in Malaysia. In sequence with the implementation of revised RSE module, a committee was formed involving a representative from RSD, Department Officers under Ministry of Education and MIROS. The establishment of committee

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aims to monitor teaching and learning of revised RSE module from March to September in three phases. After each phase, a meeting was held among committee members to report on the progress of implementation of revised RSE module. Apart from monitoring visit, teachers are required to submit a report on feedback and feasibility of the module. Furthermore, MIROS also took an initiative to guide the teachers to improve the teaching of RSE in pilot schools and sharing road safety input with teachers and students. At the end of guidance visit, technical committee and school administrator sit down for a session to discuss mainly on improving the teaching of RSE.

1.3 Establishment of Baseline for the Evaluation

A study to establish the baseline for the Revised Road Safety Education Modules for Primary School 2017 through Context, Input and Process and Product (CIPP) model is essential to determine the level of knowledge and skill about road safety among the primary school students as RSE has been nationwide implemented since 2007. It is to generate the baseline in terms of the readiness of school, teachers and student, road safety knowledge and behaviour among the students, and the spill over effects from students on parents for the pilot study of the revised RSE modules in the 24 selected primary schools in Malaysia.

1.3.1 Responsibility of MIROS

This study is cooperation between MIROS and UPM. A grant awarded by MIROS to RSRC UPM is for a study on Context, Input and Process component of CIPP model. On the other hand, MIROS is responsible for the study on the product component of the model. MIROS plays a role in presenting research proposal and plans to Research Management and Compliance Unit (RMC) MIROS for approval to conduct this study. After getting the approval, MIROS conduct the product study, which consists of knowledge, behaviour and spill over effect of road safety knowledge and behaviour from students on parents. Besides, MIROS also responsible for

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monitoring the data collection process to make sure all the study (Context, Input, Process and Product) executed according to plan. When collecting and analysing data was done, MIROS presented finding and reported the progress of the study to RSD. In addition, MIROS monitor expenditure made for all four aspects of the establishment of the baseline study. Finally, responsibility MIROS to UPM is to finalise the integrated report to ensure it is properly written.

1.3.2 Responsibility of RSRC UPM

RSRC UPM was appointed by MIROS to conduct a study on Context, Input and Process component of CIPP model. Upon this appointment, RSRC needs to prepare for research proposal and presented to RMC MIROS for approval. After approval process done, RSRC conducts the data collection and analysing the data. Next, the finding of the study reported to MIROS by RSRC UPM. Then, RSRC UPM organises writing workshop and meeting with MIROS to produce this integrated report. Draft of the integrated report was then submitted to MIROS management for reviewing and the RSRC UPM responsibility to amend the report based on the comment given. The process is completed when the MIROS management give the approval to publish this integrated report.

1.4 Needs of Study

There is a huge need to study the feasibility and effectiveness of the revised RSE module for primary students. Therefore, the revised RSE module will be piloted in selected primary schools nationwide. A baseline study is needed in the year 2016 before the revised RSE module is used during the pilot period in 2017. The Context, Input, Process and Product (CIPP) model introduced by Stufflebeam in the late 1960s is used as an assessment approach. This model is an improvements-oriented approach that aims to provide knowledge and value base for making and defending decisions, which lead to improving programs.

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Context (C) involves the assessment of the existing facilities and infrastructures available at the participating schools that could boost the learning of the RSE module whereas, the Input (I) and Process (P) evaluation involve the teachers' feedback towards implementation of the revised RSE module at the schools. The Product (P) element concludes the model by assessing the students' ability to comprehend, practice and share the lessons learned from the module.

Context, Input and Process evaluations of the CIPP model were carried out by the Road Safety Research Centre, Universiti Putra Malaysia research team appointed as a consultant for this project whereas MIROS conducted the product evaluation of the CIPP model.

1.5 Objectives of Study

The objectives of this project are:

- i. To measure contextual readiness in terms of school facilities, existing supporting programs, and school community perception on revised RSE module.
- ii. To determine the input factors that influence the revised RSE module implementation, associated factors in teachers' confidence and the associated factors in teachers' training and to provide feedback on the implementation process chain of the revised RSE module in primary schools.
- iii. To evaluate the short-term effectiveness of the revised RSE module among primary students in terms of road safety knowledge and behaviours.
- iv. To investigate the RSE spill over effect from the students to parents on safe road use behaviour by adopting Family Communication Pattern in order to measure dimensions that lead to the increase of spill over from children to parents.

1.6 Scope of Study

After almost 10 years of RSE implementation, revised RSE module has been developed due to changes in curriculum from the New Primary School Curriculum (KBSR) to Standard Based Curriculum for Primary Schools (KSSR). Besides, the advancement of education that introduced the use of media sources and 21st-century teaching approach influenced the need to develop revised RSE module. Hence, this study designed to establish a baseline for revised RSE module in pilot school selected. The target students involved in the baseline study are pre-school, Year 1 to Year 5 students, Bahasa Melayu teachers Year 1 to Year 5, Ketua Panitia Bahasa Melayu, Road Safety Club advisors/teachers at the selected schools in six districts. A post-study will be conducted to verify the baseline established during this study once the pilot period is completed.

2. Literature Review

Context, Input, Process and Product (CIPP) model was first introduced by Stufflebeam in the late 1960s (Stufflebeam, 1969). This technique has been formulated to facilitate managers' decision-making process, and it can assess the program from the earliest stages of initiation, execution and termination comprehensively and systematically (Stufflebeam & Shinkfield, 2007). The CIPP model is an improvements-oriented approach that aims to provide knowledge and value base for making and defending decisions, which lead to improving programs. This model has been applied for various educational programs evaluation in higher education (Alimohammadi, Rezaeian, Bakhshi, & VaziriNejad, 2013; Allahviridiyani, K., 2011; Mohebbi et al., 2011; Pakdaman, Soleimani Shayesteh, Kharazi fard, & Kabosi, 2011).

2.1 CIPP Model for RSE

It is an established fact that contextual readiness in terms of school facilities and existing supporting programs are important prerequisite conditions that will help in the effective implementation of the RSE module. It is very important that emphasis should also be placed on the contextual readiness both before and after the implementation.

This context study measures the need for the RSE program students and teachers. It also covers supporting programs related to road safety in schools, and facilities around the school in order to promote road safety and to ensure the safety of their students while commuting to and from schools.

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The teachers' role is critical in any successful implementation of curriculum or module. In order to evaluate the effectiveness of any module implementation, the teacher's input such as their initial perception of the RSE program. Issues relating to teachers' proficiencies and practices are important as influencing factors in the success of module implementation. Teachers' understanding, skills, training and confidence; school support, and teaching constraints are potential factors that could influence the effective implementation of a module.

The objectives of this study are to determine the factors that influence Primary School RSE module implementation, to see the associated factors in teachers' confidence and the associated factors in teachers' training. The input study measures the association among the influencing factors, namely, teachers' RSE understanding and skills; teachers' confidence, school support and teaching constraints including RSE policies, which could affect the implementation of the RSE module. It also assesses the association of RSE understanding and skills towards teachers' confidence in teaching the RSE module and; association of RSE understanding and skills towards teachers' RSE training.

The RSE execution status (fully executed, partially executed or not executed) of all units of the RSE module to students in the specified time frame will be captured in the process stage. Expectations of awareness and attitude change outcomes should consider the extent how all units were executed and understood by the students. Certain schools might implement the module successfully, while the others might partially cover a few module at different stages based on contextual conditions at the schools.

The objective of the process study is to provide feedback on the extent of implementation of the RSE module in 24 piloted schools in six districts nationwide. The process study determined the extent of implementation of the RSE module by measuring the module's stage of completion by teachers.

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The study of the curriculum or module effectiveness looks into the outcome resulting from its implementation. Students' performance is an important indicator to indicate the effectiveness of any curriculum or module implementation. The students' performance can be assessed from multiple perspectives, and these outcomes are considered to be a very important part of the CIPP model. The RSE module was designed to make students understand the dangers and risks on the road, develop skills needed and become a prudent road user. Therefore, three measures were identified to assess the outcome of RSE. These measures were knowledge, behaviours and children's influence on parents' behaviour. These measures will be compared before and after the revised RSE module implementation at schools.

3. Methodology

Overall, the baseline study method encompasses the sampling locations to be representative of primary schools in Malaysia, the duration of the study for the results of the pre-and-post study to be evident enough for inference, the implementation of the study, the study sample size, the instruments used in data collections and also statistical analyses employed for the respective baseline study through CIPP model.

3.1 Sampling Locations

The study was carried out at six zones consisting of six states in Malaysia. The selection of zones was made based on statistics from Royal Malaysian Police. Highest numbers of crash cases involving those aged 6 to 12 years old at respective districts were shortlisted before finalising the locations. Six districts were identified as listed in Table 1. Four schools in each district were randomly selected. Selections of schools are representative of national and vernacular schools in selected districts.

Table 1 Selected districts for the study

No.	Location	Zone	State	District	Type
1	Peninsular Malaysia	Northern	Kedah	Kuala Muda	Rural
2		Central	Selangor	Petaling Jaya	Urban
3		East Coast	Kelantan	Kota Bharu	Urban
4		Southern	Melaka	Alor Gajah	Rural
5	East Malaysia		Sabah	Kota Kinabalu	Urban
6			Sarawak	Miri	Rural

3.2 Study Duration

The studies were carried out in October 2016 before the pilot schools received the revised RSE module in 2017.

3.3 Study Implementation

As mentioned earlier on, this study covers the baseline of the revised RSE module in 24 selected schools for the pilot. Based on the CIPP model, RSRC UPM is responsible for the study of Context, Input, Process components whereas MIROS is to study the product component. The Context and Input-Process components focused on the school facilities and activities, built environment, and teachers’ perception on the implementation of RSE module. The product component focused on knowledge and behaviours, and the spill over effects of RSE from students to parents. Table 2 below provides the summary of baseline CIPP model implementation study.

Table 2 Baseline studies based on the CIPP model and the research organisations involved

Baseline CIPP implementation			
Context	Input & Process	Product 1	Product 2
Research 1	Research 2	Research 3	Research 4
To measure contextual readiness in terms of school facilities, existing supporting programs, and school community perception on revised RSE module.	To determine the input factors that influence the revised RSE module implementation, associated factors in teachers’ confidence and the associated factors in teachers’ training and to provide feedback on the implementation	To evaluate the short-term effectiveness of the RSE module among primary students in terms of road safety knowledge and behaviours.	To investigate the RSE spill over effect from the students to parents on safe road use behaviour by adopting Family Communication Pattern in order to measure dimensions that lead to the increase

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	process chain of the revised RSE module in primary schools.		of spill over from children to parents.
RSRC, UPM	RSRC, UPM	MIROS	MIROS

3.4 Sample Size

The baseline study for this pilot revised RSE project conducts measurements encompassing the schools, students, Bahasa Melayu (BM) teachers, co-curriculum teachers and parents from a total of 24 primary schools in six districts. Each district is represented by four primary schools. Table 3 shows the sample size for all studies, namely Context, Input & Process, Knowledge & Behaviour, and Spill Over Effects from children to parents. The co-curriculum teachers were involved in the Contextual study, Input and Process study involved the BM teachers, Knowledge and Behaviour study involved interactions with the students, while Spill Over Effect involved parents of the students.

Table 3 Sample size of research

Baseline CIPP implementation				
	Context	Input & Process	Product 1	Product 2
	Research 1	Research 2	Research 3	Research 4
No. of schools	24	24	24	24
No. of teachers	24	194	-	-
No. of teachers	-	-	Pre-school: 400 Year 1: 410 Year 2: 392 Year 3: 404 Year 4: 403 Year 5: 424 Total: 2433	2460
No. of parents	-	-	-	2238

3.5 Data Collection Instruments

Survey conducted through questionnaires is used for all these baseline studies. The details of survey and instruments used are listed in Table 4 below:

Table 4 Methods and instruments used in these studies

Method	Instrument	Study involved
Survey	Questionnaire, off-beat field survey	Context
Survey	Questionnaire	Input & process
Survey	Questionnaire	Knowledge & behaviour
Survey	Questionnaire	Spill over effect

3.6 Statistical Analyses

The statistical tests employed for data analysis used the software SPSS (Statistical Package for the Social Sciences). Table 5 indicates the CIPP study and its respective analyses.

Table 5 Statistical analyses used in CIPP model study

Software	Type of analyses	Context	Input & process	Knowledge & behaviour	Spill over effect
SPSS	Descriptive	√	√	√	√
	Odds ratio			√	
	Logistic regression				√
	Factor analysis				√

4. Results and Discussions

The CIPP model which is an improvement-oriented method as employed in this revised RSE module in primary schools encompasses the assessments of existing school facilities, built environment around the school, co-curriculum activities, the Bahasa Melayu teachers' readiness and perception towards the implementation of the revised RSE module, the students' knowledge and behaviours in related to road safety, and also the spill over effect through family communication patterns. This section discussed on findings from CIPP model to establish a baseline for the revised RSE module for primary schools.

4.1 Contextual

The baseline information through contextual assessment of the 24 primary schools will enable post study to identify the link between school context and the improvement of implementation and teachers' perception of the revised RSE module in primary schools.

Overall, the total number of primary school students in all the 24 piloted schools is 14,547 while the total number of Bahasa Melayu teachers in the primary schools is 241. That gives a ratio of about 60 students per one Bahasa Melayu teacher. About 80% of Bahasa Melayu teachers are female. All the 24 schools have not yet received the revised RSE module as of mid-January 2017.

As for the electronic and ICT facilities, Table 6 indicated that not all schools have computer laboratories, LCD screen and most importantly internet access. Improvements should be looked into item 1-5, and the influence of these facilities on RSE implementation can be measured during the post-study.

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Table 6 School availability of teaching aids facilities within six districts

Item	Teaching aid facility	Schools availability (%)
1	Computer laboratory	83
2	LCD screen	83
3	Internet access	79
4	LCD projector	71
5	Portable CD player	67
6	VCD player	63
7	Audio visual room	58
8	DVD player	54

Most schools under study have minimal road safety programs or activities so far. Only 4% had road safety talks organised by the students and teachers in the school, but none took part in any road safety activities organised out of the school.

So far, 29% have had a road safety club before, and 21% were still active in the year 2016. All road safety club members are students from Year 4, 5 and 6. With regard to the Guidelines of Road Safety Club in Primary Schools documents, only 4% of schools acquired it and 8% refers to the guidelines document. Most schools do not keep documents of previous road safety clubs.

Only 4% of the schools have a Road Safety Corner within their school compounds located in the co-curriculum activities notice boards. Meanwhile, among the common road safety materials found within the school compounds are safety cones (58%) and traffic signs (4%).

However, none of the schools has the School Traffic Warden Program. Under the initiative of the school management, about 8% of these schools contributed to the guard reflective jackets and red coloured flags to act as a traffic warden during the arrival and leaving times of the primary students.

A high percentage of schools under study have traffic calming facilities (92%) such as speed humps and rumble strips on the roads outside the school compound. Apart

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from that, about 71% has pedestrian zebra crossings on the roads while 13% has pedestrian walkways. Special parking facility for bicycles is available in 71% of the schools.

Further, outside the school areas, 71% of them have bus bays, 79% pick-up zone, 21% waiting area for students and 8% with entrance/exit in the back of school away from traffic. Among other traffic signs that are available in the school compound are speed humps (67%), one-way street (13%), pedestrian crossing (4%), speed limit 30 km/h (4%).

4.2 Input and Process

The Input-Process baseline study focuses on the initial perception of BM teachers on the implementation of RSE programs in primary schools. It is important to note that these teachers in the piloted primary schools have an average teaching experience of 3 years. Therefore, they had gone through the existing RSE module. Their perceptions of issues related to the implementation of RSE transcribed from the answered questionnaires would reflect their experience with the existing RSE module until the year 2016. The post-study would then be able to measure the difference in perceptions between the existing and the newly revised RSE module among the 24 pilot schools.

Overall, the total number of primary school students in all the 24 schools under study is 14,547 while the total number of BM teachers teaching in primary schools who participated in the perception questionnaire exercise is 194.

Table 7 shows the perception scores with respect to positive and negative statements on RSE. It indicated that more than 85% of BM teachers agreed that RSE program is important, should be continued, effective to influence children behaviour, exposes road safety to teachers and the program should be supported by everyone (statement 1-5).

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It was noted that the other group of statements 6-9 which have a ratio of below 0.85 seems to be a little concerned about the embedment of RSE in BM subjects, and also whether RSE can improve the understanding of the BM subject itself.

As for statements 10-12, these are three negative statements placed in between the other nine positive statements. The ratio of 0.45-0.62 that agreed the RSE program interferes with the teaching-learning of BM, a burden to teachers and should be discontinued may not really reflect the actual opinions of the same sample of teachers who generally agreed with the positive statements 1-9.

A random check on the hardcopies of filled questionnaires found evidence that some of the students did not read each statement thoroughly before ticking the boxes from Strongly Disagree to Strongly Agree. Maybe some students do a quick reading and think that all statements are positive towards the implementation of RSE program in primary schools and they generally agreed with the all statements.

It should be noted that some truth in the negative statements could prevail, thus further scrutinising of the filled questionnaire hard copies should be done. This is essential so that it can be noted and checked again during the development of the instrument for the post study in October 2017.

The overall teacher's perception about the need of RSE in primary schools is good. Table 8 indicated that the 85th percentile score is 9, while the 25th percentile score is 6. The mean value of 7.19 and median of 7 also indicate that the data is normally distributed.

Table 7 Agree/Disagree ratio on twelve statements of RSE

Item	Statement	Agree/ Disagree ratio
1	RSE program is important for primary students	0.94
2	RSE program should be continued to improve road safety	0.94
3	RSE program is effective in influencing students behaviour	0.90

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4	RSE program also exposes road safety to teachers	0.92
5	Everyone should support RSE	0.84
6	RSE program can produce road users of positive behaviour	0.82
7	RSE program is a platform towards reducing road accidents	0.76
8	Embedment of RSE in BM subject is appropriate	0.75
9	RSE program can improve the understanding of BM subject	0.68
10	RSE program interferes with the teaching-learning of BM	0.62
11	RSE program is a burden on teachers	0.61
12	RSE program should be discontinued because it fails to produce outcome	0.45

Table 8 Descriptive analysis on teacher’s overall perception on RSE

Descriptions	Overall score (1-10)
Mean	7.19
Standard error	0.13
Median	7
Mode	8
Standard deviation	1.77
Sample variance	3.14
Kurtosis	-0.27
Skewness	-0.28
Range	8
Minimum	2
Maximum	10
Sum	1394
Count	194
25 percentile	6
85 percentile	9

4.3 Knowledge and Behaviour (Product 1)

The analysis of the product component comprises of two parts, i.e. the road safety knowledge, and behaviour among pre-schools children to Year 5 students in Malaysia. These two parts covered all the contents from revised RSE module developed in 2016 through a project of “Review and Redevelopment of the RSE Module”. For road safety knowledge part, six items have been developed based on six themes of revised RSE module. Meanwhile, as for the road safety behaviour part, 10 items have been allocated for pre-school children and students of Year 1, Year 2 and Year 3 whereas 23 items were allocated for students of Year 4 and Year 5. Each statement is designed to assess students’ tendency for engaging in safe behaviours. All the items emphasise on behaviour range from crossing the road and pedestrian behaviour on the road. The score on road safety knowledge among pre-school children to Year 5 students is as shown in Table 9.

Table 9 Road safety knowledge among pre-school children to year 5 students

Score	Percentage (%)					
	Pre-school	Year 1	Year 2	Year 3	Year 4	Year 5
0	57.9				1.2	
1	0.5	0.2			4.2	0.7
2	3.2	0.7			1.0	0.2
3	4.2	1.2	2.2		1.7	
4	13.0	11.7	0.7	0.8	4.9	0.2
5	11.5	39.0	5.2	0.8	4.4	0.9
6	9.7	47.1	3.9	0.5	2.2	2.1
7			4.9	6.3	10.1	1.4
8			2.2	3.5	18.5	
9			13.0	4.3	6.7	2.4
10			22.4	21.0	3.5	7.1
11			12.0	12.8	8.4	4.9
12			20.6	4.3	24.0	1.6
13			12.8	6.3	9.1	12.0
14				39.8		32.7
15						33.6

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The findings show that about 57.9% of pre-school children failed to answer correctly any of the related questions since pre-school children have no exposure to road safety education. On the other hand, students of each year show the different cut-off score for road safety knowledge. This is because the questions were designed for each year based on Bloom Taxonomy hierarchical along with six themes found in revised RSE module. As for the pre-school children, 57.9% of them failed to answer correctly any of the questions provided which are relatable, as pre-school children have not exposed to road safety education. The cut-off score for Year 1 students is at the score of 4 where only 11.7% of the students have obtained this score. For Year 2 students, the cut-off score is at the score of 9 with 13.0% of them got this score. Meanwhile, the Year 3 students demonstrated a cut-off score of 10 with 21% of them achieved this score. Whereas the score of 7 is the cut-off for students of Year 4, 10.1% of them possess this score. Lastly, for students of Year 5, the cut-off score is 13, and 12% of them hold this score. The cut-off score for road safety knowledge among primary school students during post study is expected to improve and the percentage of the cut-off score will increase respectively.

The absence of teaching RSE in the classroom is one of the factors that contributed to students' score on the road safety knowledge. The findings of previous research stated that teachers lacked time to teach RSE module during Bahasa Melayu period (Norainy et al., 2016). The methodology used by teachers also affects student's understanding on RSE. The teacher should use the effective method in teaching the content of RSE and achieving the objectives. Thus, to improve delivering of the revised RSE module, teachers should be competent and well-trained besides being able to use the effective methodology are essential (Assailly, 2016).

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Table 10 Road safety knowledge among pre-school children and year 1 students

Item	Behaviour	Pre-school						Year 1					
		Urban (%)			Rural (%)			Urban (%)			Rural (%)		
		Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always
1	Wear bright or white clothes when walking at dusk	39.00	34.90	26.20	49.80	25.90	24.40	31.60	47.80	20.60	27.90	46.80	25.40
2	Cross the street when the green man signal is on	33.80	28.70	37.40	33.70	28.80	37.60	16.70	20.60	62.70	15.40	29.40	55.20
3	Walk down the street, facing the cars and traffic	50.80	27.20	22.10	66.30	21.50	12.20	37.80	36.80	25.40	40.80	39.80	19.40
4	Hold adult's hand when crossing the street	4.60	21.50	73.80	7.30	19.00	73.70	7.20	9.60	83.30	1.50	12.90	85.60
5	Looking left, then right, and then left again before crossing the street	19.50	20.50	60.00	18.00	25.90	56.10	4.80	17.70	77.50	5.00	21.40	73.60
6	Wave at the drivers before crossing the street	52.80	24.60	22.60	56.10	19.50	24.40	49.30	27.80	23.00	51.70	26.90	21.40
7	Crossing the street between parked cars	73.30	15.40	11.30	83.40	6.30	10.20	68.40	20.60	11.00	81.60	12.90	5.50
8	Run when crossing a street to get to the other side fast	70.80	19.00	10.30	62.40	21.50	16.10	54.50	27.80	17.70	70.60	22.4	7.00
9	Ride bicycle in the street	72.80	19.00	8.20	78.00	10.20	11.70	73.20	20.60	6.20	87.60	8.50	4.00
10	Wear dark clothes when walking at night	57.40	30.30	12.30	69.30	18.50	12.20	50.20	36.80	12.90	70.60	23.40	6.00

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Table 11 Road safety behaviour among year 2 and year 3 students

Item	Behaviour	Year 2						Year 3					
		Urban (%)			Rural (%)			Urban (%)			Rural (%)		
		Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always
1	Wear bright or white clothes when walk at dusk	20.60	54.40	25.00	39.40	35.60	25.00	36.70	41.20	22.10	28.80	55.60	15.60
2	Cross the street when the green man signal is on	29.40	26.00	44.60	16.50	36.70	46.80	22.10	25.10	52.80	15.10	28.30	56.60
3	Walk down the street, facing the cars and traffic	33.30	43.10	23.50	38.80	42.60	18.60	29.10	45.20	25.60	46.80	37.10	16.10
4	Hold adult's hand when crossing the street	3.90	19.10	77.00	20.20	17.60	62.20	5.00	16.10	78.90	3.40	21.50	75.10
5	Looking left, then right, and then left again before crossing the street	3.40	21.10	75.50	13.80	27.10	59.00	7.00	18.60	74.40	3.90	18.50	77.60
6	Wave at the drivers before crossing the street	39.70	32.80	27.50	27.10	30.30	42.60	40.20	34.70	25.10	53.70	25.90	20.50
7	Crossing the street between parked cars	54.90	31.90	13.20	59.00	25.00	16.00	61.80	28.10	10.10	64.40	29.30	6.30
8	Run when crossing a street to get to the other side fast	62.70	28.40	8.80	72.30	22.30	5.30	54.80	30.20	15.10	62.90	31.70	5.40
9	Ride bicycle in the street	81.40	11.80	6.90	69.70	23.40	6.90	65.80	22.10	12.1	72.70	19.00	8.30
10	Wear dark clothes when walking at night	30.40	51.00	18.60	28.70	37.80	33.50	52.30	42.20	5.50	33.70	61.00	5.40

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The analysis reported the positive and negative road safety behaviour among pre-school children to Year 3 students in the urban and rural area (Table 10 and Table 11). There were six positive behaviours (item 1 to 6) and four negative behaviours (item 7 to 10) that have been analysed in this study. The findings revealed that less than 50% of the students from pre-school, Year 1, Year 2 and Year 3 stated “always” on three out of six positive road safety behaviour items. These findings are dominant in both urban and rural areas. The majority of children in pre-school until Year 3 student are still not aware of the importance of wearing bright clothes to enhance their visibility. Apart from that, they are also not aware of the importance of walking facing the traffic along the street and to wave at the drivers before crossing the street. However, the percentage of students stated “always” in item “hold adults’ hand when crossing street” is high which is more than 60%.

As a baseline, children did not engage in negative road safety behaviours while being on the road. However, their performance on positive road safety behaviours does not indicate their awareness of road traffic hazards. It is expected student positive behaviour will improve with the implementation of revised RSE module. However, it cannot be guaranteed that good command of road safety knowledge reflects the student’s behaviour when placed in real traffic environment (Berry & Romo, 2006; Zeedyk et al., 2001). According to Berry and Romo (2006), students tend to get the answers right because of their exposure to the RSE module before and more concern about getting the right answers but not practising the right behaviour in daily life.

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Table 12 Road safety behaviour among year 4 and year 5 students

Item	Behaviour	Year 4						Year 5					
		Urban (%)			Rural (%)			Urban (%)			Rural (%)		
		Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always	Never	Seldom	Always
1	Use a lollipop man/lady when there is one available	42.20	33.70	24.10	37.70	41.20	21.10	41.00	31.50	27.50	25.90	42.40	31.70
2	Check to make sure the traffic has completely stop before crossing at a pedestrian crossing	30.70	26.60	42.70	19.60	36.80	43.60	8.50	33.00	58.50	6.70	39.70	53.60
3	Keep looking and listening for traffic until you get all the way across the road	8.00	24.10	67.80	8.30	26.00	65.70	6.50	29.00	64.50	4.50	30.80	64.70
4	Walk in the road facing the traffic	57.80	31.20	11.10	39.70	44.10	16.20	40.50	45.50	14.00	27.20	55.40	17.40
5	Wear bright or reflective clothing when out on foot in the dark	70.40	18.10	11.60	68.60	20.10	11.30	73.50	18.00	8.50	67.40	20.50	12.10
6	Wear helmet while riding a bicycle	67.80	14.60	17.60	73.00	19.10	7.80	65.00	16.50	18.50	80.40	12.90	6.70
7	Forget to look properly because you are using a mobile phone	82.40	15.10	2.50	88.70	10.80	0.50	86.50	7.50	6.00	91.50	8.00	0.40
8	Forget to look properly because you are thinking about something else	68.30	25.60	6.00	69.60	27.90	2.50	71.00	24.50	4.50	70.50	26.80	2.70
9	Forget to look properly because you are talking to friends who are with you	81.9	13.6	4.5	79.4	18.1	2.5	78	19	3	70.5	28.1	1.3
10	Cross whether traffic is coming or not, thinking that the traffic should stop for you	69.80	25.10	5.00	76.00	19.10	4.90	78.00	20.00	2.00	71.90	25.00	3.10

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11	Not look because you can't hear any traffic around	78.90	14.60	6.50	82.40	16.20	1.50	77.00	19.50	3.50	72.30	25.00	2.70
12	Think you have enough time to cross safely, but a car is coming faster than you thought	73.40	18.10	8.50	64.20	29.90	5.90	62.00	26.50	11.50	67.00	31.30	1.80
13	Climb over barriers or railings that separate the road from the pavement	80.90	15.10	4.00	88.20	11.30	0.50	85.00	11.50	3.50	83.90	13.80	2.20
14	Not use pedestrian crossing nearby to cross the road	48.20	30.70	21.10	70.10	20.60	9.30	65.00	28.50	6.50	65.20	24.60	10.30
15	Have to stop quickly or turn back to avoid traffic	74.40	22.10	3.50	69.60	27.50	2.90	66.00	25.00	9.00	67.00	28.10	4.90
16	Get half way across a road and then have to run the rest of the way to avoid traffic	88.40	8.00	3.50	93.60	4.90	1.50	91.50	6.00	2.50	90.60	6.30	3.10
17	Cross the road behind parked vehicles	61.30	29.60	9.00	41.70	47.10	11.30	32.50	48.00	19.50	28.60	56.30	15.20
18	Cross without waiting for green man signal at a pedestrian crossing	69.80	19.60	10.60	70.10	20.60	9.30	80.50	13.00	6.50	87.10	10.30	2.70
19	Make traffic stop or slow down the traffic to let you cross the street	42.20	34.20	23.60	34.80	41.70	23.50	30.00	49.00	21.00	35.70	46.40	17.90
20	See a small gap in the traffic and go for it	67.80	22.60	9.50	58.30	33.30	8.30	54.00	35.50	10.50	57.10	35.70	7.10
21	Playing around at the road	83.40	12.60	4.00	82.80	15.20	2.00	78.00	14.00	8.00	76.80	16.50	6.70
22	Play at the street and unaware of vehicle's approaching	85.90	11.60	2.50	85.30	12.70	2.00	83.50	15.00	1.50	87.50	10.70	1.80
23	Hang around in the road talking to friends	73.40	18.10	8.50	73.50	19.10	7.40	82.50	14.00	3.50	79.00	16.50	4.50

Establishing Baseline for the 2017 Revised Road Safety Education Module for Primary School through Context, Input, Process and Product (CIPP) Model

The analysis reported the positive and negative road safety behaviour among Year 4 and Year 5 student in the urban and rural area (Table 12). There were six positive behaviours (item 1 to 6) and seventeen negative behaviours (item 7 to 23) that have been analysed in this study. As for students of Year 4 and Year 5, less than 40% of the students stated “always” on four out of six positive behaviours item. All the above findings are prevalent in both urban and rural areas. It is revealed that only 30% of the students had used the service of lollipop man. Perhaps not many schools have school guards who also act as a lollipop man during school arrival and leaving hours. Overall, the finding showed that majority of Year 4 student adopted more positive behaviour than the Year 5 student, and engaged less in negative behaviour than Year 5 student. Furthermore, the result also revealed that student in the urban area is having more positive behaviour than students in the rural area.

The road safety behaviour among primary school students is expected to improve after the implementation of revised RSE module. During the post stage, study students are more likely aware of wearing bright or white clothes when walking at night, aware the importance of facing traffic while walking down the street and wave to drivers before crossing.

4.4 Spill Over Effects (Product 2)

The spill over effect of road safety knowledge and behaviour from students on parents is indicated by the Willingness to Pay (WTP). Besides, Family Communication Pattern (FCP) variable is included to explain the effect of family communication towards the spill over of RSE from students on parents. As for FCP, this study found that pluralistic has the highest mean of WTP among parents in all level of students followed by protective categories.

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Table 13 Parents' mean WTP (in RM)

Student level	FCP	WTP (RM)
Pre-school		868.33
	Laissez-faire	1,204.66
	Protective	322.29
	Pluralistic	1,261.67
	Consensual	684.68
Year 1		1,308.28
	Laissez-faire	2,095.84
	Protective	488.65
	Pluralistic	1,338.21
	Consensual	1,310.41
Year 2		701.91
	Laissez-faire	703.22
	Protective	311.51
	Pluralistic	1,083.38
	Consensual	709.54
Year 3		2,268.30
	Laissez-faire	1,744.82
	Protective	2,818.33
	Pluralistic	2,189.73
	Consensual	2,320.30
Year 4		28,645.37
	Laissez-faire	2,276.77
	Protective	656.25
	Pluralistic	110,725.97
	Consensual	922.49
Year 5		2013.13
	Laissez-faire	1,225.49
	Protective	3,546.73
	Pluralistic	894.21
	Consensual	2,238.09

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The findings revealed that the mean WTP of RM919.41 is contributed by protective category of Family Communication Pattern. Whereas, consensual category reported RM1,364.25 as the mean WTP. As for Laissez-faire category, the mean WTP is RM1,541.80. The mean WTP of the pluralistic category is RM19,582.20. It is expected that the mean of WTP among parent in post survey group will increase as compared to the baseline survey group, proving the positive effect of revised RSE module.

Table 14 Parent-child road safety initiations discussion among pre-school children to year 5 students

Student level	Safety equipment		Road safety regulations		Sharing with parent on road safety experience/views	
	No	Yes	No	Yes	No	Yes
Pre-school	175	225	141	198	102	237
	43.6%	56.1%	41.6%	58.4%	30.1%	69.9%
Year 1	222	191	152	224	95	280
	58.3%	46.2%	40.4%	59.6%	25.3%	74.5%
Year 2	174	234	170	201	134	237
	42.6%	57.4%	45.8%	54.2%	36.1%	63.9%
Year 3	202	203	139	198	95	242
	49.9%	50.1%	41.2%	58.8%	28.2%	71.8%
Year 4	205	203	167	213	118	262
	50.2%	49.8%	43.9%	56.1%	31.1%	68.9%
Year 5	165	260	172	203	120	255
	38.8%	61.2%	45.9%	54.1%	32.0%	68.0%
Total	1143	1316	1019	1158	664	1513
	46.5%	53.5%	46.8%	53.2%	30.5%	69.5%

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On the other hand, the baseline for the parent-child initiation discussion on the topic of safety equipment, road safety regulations and road safety experience/views are established. The students of pre-school until Year 5 reported the highest percentage. It recorded more than 60% on the topic of road safety experience/views. The content of parent-child initiation discussion is expected to be wider which would include the topic of safety equipment, road safety regulations besides road safety experience/views. Spill over effect will increase by increasing the mean of WTP due to a broader scope of content in parent-child initiation discussion.

5. Recommendations and Conclusion

The contextual study conducted among the pilot 24 primary schools found that 83% of schools have computer laboratory and 79% have internet access. In addition, 83% of the schools have LCD screen and 71% have LCD projector. These are useful baseline information so that the post-study at the end of the year 2017 could investigate to see if these facilities are then available in the schools that do not have them previously. The idea is to assess the hypothesis that availability of the internet access and the other supporting facilities enhance the teaching delivery by teachers and learning process of students on the revised RSE modules.

Another important aspect of contextual study for baseline information is regarding road safety clubs, road safety activities organised in and out of schools, and road safety corners and. As of the end of the year 2016, only 21% of the pilot schools have road safety clubs that are still active (club members are students from Year 4, 5 and 6 only). Apart from that, only 4% of schools have had road safety activities or talks, and only 4% have road safety corners that exhibit road safety materials at the notice boards. The availability of road safety activities, clubs, corners is important to create awareness and knowledge input to both teachers and students. As such, the post-study will seek to measure on any enhancement in these supporting activities that increase teacher's perception and student's knowledge in road safety.

With regard to facilities outside the school compound, the baselines that are established are the availability of the School Traffic Warden Program. As of the end of the year 2016, there is no such program available in all 24 schools. Since this program is important to boost student's appreciation and knowledge in road safety, a post-study will seek to identify if any of the schools have implemented the program in 2017.

Establishing Baseline for the 2017 Revised Road Safety Education Module for Primary School through Context, Input, Process and Product (CIPP) Model

In the Input-Process component study relating the initial perception of BM teachers on the implementation of RSE in primary schools, it was found that 85% of them rated 9 out of 10 for their overall opinion on the need of RSE program in schools. This baseline represents their perception from experience of teaching the previous RSE modules. The development of instruments to objectively measure the improvement of the revised RSE module in the post study need to take into account of the pre-study questionnaires.

Based on the findings, it is recommended a few aspects of the contextual component need to be improved. The school should have the initiatives to establish road safety club and to plan road safety activities by inviting road safety officers from RSD to provide road safety talks. Besides that, the school should provide road safety corners to display important infographic related to road safety. As none of the school having lollipop man, it is suggested that the school can seek training from state RSD to provide road safety training to the existing security guard of the school.

From the product study, the findings of road safety knowledge and behaviour suggest there is a need for several courses of actions in order to enhance the effectiveness of revised RSE module in future. The use of media sources such as audio and video enable the teaching material to communicate well with the students and further enhance their understanding of the material taught. Through this process, students are able to recall new knowledge and transfer the inputs into behaviour that they practice in daily life. In order to enhance student's road safety knowledge, teachers need to cover all RSE topics in the module. Besides that, the teacher should be able to apply 21st-century teaching approaches that integrate the use of current technologies, problem-based approaches and higher order thinking skills. The content of the module should emphasise on pedestrian behaviour on the road because finding reported students lack awareness on positive pedestrian behaviour when on the road.

Establishing Baseline for the 2017 Revised Road Safety Education Module for Primary School through Context, Input, Process and Product (CIPP) Model

The findings also stated although there is spill over effect from students on parents about road safety, more efforts are required to increase the involvement of parents. The FCP and child-parent initiation discussion on topics about road safety and instilling the road safety awareness among the children may help to achieve this objective.

In conclusion, the performance of students on road safety behaviour is at an average level while students' road safety knowledge is fair. This could be due to the positive impact of the implementation of previous RSE module. Serious considerations on the student's practices on positive road safety behaviour are important since most of the Malaysians use roads to school and other places on a daily basis. Besides that, parents need to be road safety role models and primary trainers in road safety skills to their children. The FCP and child-parent initiation discussion on topics about road safety are appropriate.

The inputs of this study established the baseline for the post study of Revised Road Safety Education Module in Primary School 2017 through Context, Input, Process and Product (CIPP). Positive changes from the baseline for all the components is anticipated as the modules have been revised due to the change of curriculum from the New Primary School Curriculum (KBSR) to Standard Based Curriculum for Primary Schools (KSSR). Besides that, the modules were amended in a few aspects, namely the theme, contents, activities, teaching aids and parent's involvement.

References

- Alimohammadi, T., Rezaeian, M., Bakhshi, H., & VaziriNejad, R. (2013). The evaluation of the medical school faculty of Rafsanjan University of medical sciences based on the CIPP model in 2010. *Journal of Rafsanjan University of Medical Sciences*, 12(3), 205-218.
- Allahviridiyani, K. (2011). Evaluate implemented academic advisor of shahed students in Tehran State Universities through CIPP evaluation model. *Procedia-Social and Behavioural Sciences*, 15, 2996-2998.
- Assailly, J. P. (2016). Patient education and counseling road safety education: What works? *Patient Education and Counseling*, (2015), 1–6. <http://doi.org/10.1016/j.pec.2015.10.017>
- Ben-bassat, T., & Avnieli, S. (2016). The effect of a road safety educational program for kindergarten student on their parents ' behavior and knowledge. *Accident Analysis and Prevention*, 95, 78–85. <http://doi.org/10.1016/j.aap.2016.06.024>
- Berry, D. S., & Romo, C. V. (2006). Should "Cyrus the Centipede" take a hike? *Effects of exposure to a pedestrian safety program on student's safety knowledge and self-reported behaviors*, 37, 333–341. <http://doi.org/10.1016/j.jsr.2006.05.003>
- Mohebbi, N., Akhlaghi, F., Yarmohammadian, M. H., & Khoshgam, M. (2011). Application of CIPP model for evaluating the medical records education course at master of science level at Iranian medical sciences universities. *Procedia-Social and Behavioural Sciences*, 15, 3286-3290.

Establishing Baseline for the 2017 Revised Road Safety Education Module for Primary School through Context, Input, Process and Product (CIPP) Model

- Pakdaman, A., Soleimani Shayesteh, Y., Kharazi fard, M. J., & Kabosi, R. (2011). Evaluation of the achievement of educational objectives of the community oral health and periodontics departments using the CIPP model of evaluation—students' perspective. *Journal of Dental Medicine*, 24(1), 20-25.
- Stufflebeam, D. L. (1969). *Evaluation as enlightenment for decision-making*. In A. Walcott (Ed.), *improving educational assessment and an inventory of measures of affective behaviour*. Washington, DC: Association for Supervision and Curriculum Development.
- Stufflebeam, D. L., & Shinkfield, A. J. (2007). *Evaluation theory, models, and applications*. Wiley.



Research Report

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