A lesson plan toolkit for post pandemic education

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Abstract

Novel approaches to learning such as student-centred learning, self-directed learning, hybrid learning, and flipped classrooms were not just theories but imperatives for engaging students in education in distance mode during the pandemic, but teachers were not fully prepared to take advantage of the opportunity. For those who tried, evaluating student learning as expected by parents and school authorities proved to be difficult because traditional summative tests do not capture the extent of learning through these new approaches.

Abridging the curricula too was a necessity during the pandemic but most education systems could not respond to this need in time.

The present paper describes the development and application of a toolkit for middle school students in Sri Lanka which allows teachers to develop lesson plans covering the full array of learning outcomes defined in the national curriculum but focusing on the essential learning outcomes, and include (1) pre-activities that guide students to read the textbooks on their own and learn in flipped-classroom mode, (2) activities that can be carried out at home or at school in hybrid mode, and (3) assessments that are authentic because they assess students' knowledge, skills, and attitudes in reference to the activities they carried out.

Introduction

Novel approaches to learning such as student-centred learning, self-directed learning, hybrid learning, and flipped classrooms were not just theories but imperatives for engaging students in education in distance mode during the pandemic. With interaction between students and teachers limited to a few hours online, students had to be self-directed for effective learning (Roberson et al., 2021). Further, some of the learning was done face-to-face online, and some the learning had to be done at home using pre-recorded lessons or notes delivered on WhatsApp or Google classroom. Without formal training or instructions from authorities, schools incorporated flipped classroom style and/or hybrid modes of teaching and learning (T&L).

However, for those who tried novel ways of teaching, evaluating student learning as expected by parents and school authorities would prove to be difficult because traditional summative tests do not capture the extent of learning through these new approaches. Parents often have their own opinions about education that are based on their upbringing or their understanding, yet receiving parental support is a key aspect to the successful implementation of new assessment strategies (Meisels et al., 2001). Abridging the curricula too was a necessity during the pandemic but most education systems could not respond to this need in time and teachers could not do that on their own (UNICEF, 2022).

Education Forum Sri Lanka (EFSL) was able to observe this phenomenon first hand when a leading private school in Sri Lanka approached us to assist their teachers to handle the students when they return for face-to-face education after nearly two years of learning remotely.

In mid-2021, well into the second year of the pandemic, noting that both students and teachers were stressed out, the management of the school had instructed the teachers in primary and junior secondary schools to stop giving notes and not test children when they are on distance mode but to make teaching fun for students. The teachers and students took-up the challenge readily and they started experimenting with self-directed learning and collaborative learning approaches without any formal training on those. For example, teachers would now ask students to read the textbook on their own or in groups and do presentations for the class. Some teachers adopted quiz show style presentations where teams would quiz each other. There was no testing to assess learning but by all accounts, students participated enthusiastically, sometimes teams stayed up late preparing for quizzes.

Desired changes in education are described in various terms. We use the term authentic learning as a catch all phrase. Authentic learning allows students to relate their learning to familiar contexts and learn through exploration. The teaching and learning process at the selected school during the last half of the 2021 academic year indeed showed the beginnings of an authentic learning process. When relieved of the pressure to give notes as a way of preparing students for tests, teachers and students together found creative ways to provide a more authentic learning experience.

When students return to school, will teachers be able to sustain this style of teaching in a context where parents and higher authorities expect them to 'cover the syllabus' and produce a report card'' at the end of the term with a mark out of hundred for each subject and a class rank for each student? Would students find it hard

to settle back to the old way of learning? Even if they do settle back easily, is it not important from a policy point of view to use the momentum to change the style of learning for the better?

In this context, the problem or the research question addressed in this study is how best to support teachers to continue with and improve on the good practices in authentic learning in a post-pandemic setting where the parents, policy makers and society may have settled back into their expectations regarding the outcomes of education as success at examinations.

The intervention or the hypothesis to be tested is a lesson plan toolkit and accompanying sample lesson plans with the expected outcomes being that teachers can give the students an authentic learning experience while being able to "cover the syllabus" and "report on student learning" across the full complement of learning outcomes expected in the national curriculum.

The tool was tested using an action research approach where we tested the efficacy of the toolkit and/or the philosophy behind the toolkit by working with a selected school for one term in the 2022 school year. A proper evaluation of the tool requires at least one cycle of a school year, but preliminary results after one term of operating under difficult post-pandemic conditions looks promising.

Methodology

We used an action research method in which we co-created, implemented, and evaluated a lesson plan toolkit with teachers at a major private school in Sri Lanka. Two phases of the co-creation, implementation, evaluation, and re-creation cycle was carried out - one in the third term of the 2021 academic year from September to December, and the other in Term 1 of 2022 academic year at the end of the 2021 school year. The cycles will be repeated at the end of Term 2 and Term 3 of 2023, if allowed.

A private school as a target school was not selected on purpose. The opportunity presented itself when the principal approached us. However, working with a better-endowed private school gave us the ability to test the tool without worrying about the necessary condition of teachers being able to reach students and students being able to interact with each other when the learning must be in distant mode due to the pandemic or other reasons. As a survey of primary school children in Sri Lanka demonstrated, access to reliable household internet connectivity during the pandemic was more than two times larger in children attending private schools than those attending public schools (UNICEF, 2021). How to close this digital learning gap is a topic for another paper.

We selected students in primary and junior secondary levels (or students in Grades 1-9) because they do not sit for national examination until the end of Grade 11 and are somewhat shielded from examination pressures.

We also divided the thirteen subjects that the junior secondary students are required to study into two groups - Core and Non-core subjects. Core subjects included Mother Tongue, English, Math, Science, History and Religion. These six subjects are compulsory for GCE O/L examination. The other subjects included Civics, Geography, Health & Physical Education, Practical & Technical Skill, ICT, Aesthetics, and the Second language.

We decided to focus on the non-core subjects for Grade 6 initially, but all Junior secondary teachers participated in the information meetings and key lesson plan co-creating sessions.

The lesson plan toolkit was designed such that teachers may choose an interactive activity suited for their own context and organize the expected learning outcomes around the activity. The toolkit allowed teachers to choose the medium of instruction, subject/s, and competencies, competency levels and learning outcomes expected from the activities included in a lesson plan. Next is space for teachers to add Pre-activities, Activities and Assessments and other details for each lesson plan. In many cases, teachers did not have to move too far from the list of activities provided in the textbooks in the order they are presented, but in some cases with one simple recurring activity they were able to cover learning outcomes across subjects in a way that fostered student learning.

The textbooks provided by the government are designed to cover the one thousand or so learning outcomes expected of a child studying 13 subjects in, say, Grade 6. If you follow these guidelines lockstep, especially under pandemic or other difficult conditions, "covering the syllabus" would be an ornery task.

A lesson plan could be a module covering several lessons. One such module that enabled teaches to cover many learning outcomes across subjects is the "family meal" module where students chose to help with a family

meal once a week or even once a month, doing up a menu, shopping, and preparing and serving the meal covered learning outcomes in nutrition, math, design, and polite behaviour from other subjects in the curriculum.

The lesson plan toolkit is available at lessonplans.educationforum.lk for registration by anybody with an email.

Results

First cycle, September-December 2021

EFSL worked with teachers in Grades 6-9 from September 1st - December 4th, the third term of the 2021 academic year, and held 20+ meetings of 2 hour or more held via Zoom or face to face at the school premises. We were assisted by two coordinators, one for primary grades and the other for junior secondary grades.

We co-created 10+ model lesson plans or modules which are activity-based, largely self-directed by students and can be used in hybrid-mode (i.e., equally usable face-2-face in school or remotely at home) for non-core subjects in Grade 6 in Term 1 of 2022 (See https://lessonplans.educationforum.lk/view-modules). Additional lesson plans for topics to be covered in the third term which were developed at the pilot stage are also available.

We surveyed the teachers at the end of the third term of 2022. Prior to closing we carried out a survey of the teachers in grade 6 using Google Forms, what they felt about management's no notes, no testing initiative and how they felt about the intervention by EFSL. The simple questionnaire included simple yes/no questions.

1. School's decision in July to allow children to learn through activities without the stress of examinations has made LEARNING MORE JOYFUL for students (Yes/No)
2. School's decision in July to allow children to learn through activities without the stress of examinations has made STUDENTS LEARN BETTER (Yes/no)
3. Will you use the EFSL lesson plan tool kit at "lessonplans.educationforum.lk" for term 1 in 2022, if the school continues the policy of test-free education? (Yes/no)
4. Will you use the ASSESSMENT WORKSHEET in Appendix 2 in the EFSL draft report to grade your students in the First term of 2022, if the school continues the policy of test-free education? (YES/No)
5. Is the REPORT CARD format proposed by EFSL adequate for communicating with parents? (Yes/No)

We made it possible for teachers to respond anonymously so they may express their opinions freely.

Only half of the teachers responded to the survey, but all the respondents agreed that the no-notes no-tests initiative made the children happier and made their learning better. All respondents also said they would use the lesson plan toolkit and assessment worksheets provided by EFSL. As for the report card format one respondent said they would need to know more. In their comments most wanted to get a chance to try out the proposed changes, add more pre activities (questions) and other activities so that teachers have a wide choice to choose from, and ensure assistance from the management to respond to parents' inquiries were some other comments.

As for the 50% who did not respond, it is likely that they did not feel enthusiastic about the no-note no-tests initiative. On the positive side, taking a glass-is-half-full approach it seems that 50% of teachers are enthusiastic about the new approach.

Second Cycle, December 2021-March 2022

During January, teachers were busy helping the Grade five students adjust to Grade 6. Children have been learning online for two years and their basic language and math skills were lacking. Some children could hardly write a sentence. Because of this reason, teachers had difficulty doing the pre-activities which required them reading on their own for self-directed learning using the textbook.

In February the teachers had to switch to online schooling again because schools had to be closed for GCE A/L examination. Application of authentic learning techniques would have been sporadic because of the under preparation of students, also because teachers were not quite ready to apply the hybrid lesson plans to smoothly transition from Face-2-face learning in January to online learning in February.

During this period the EFSL team was available for consultations for the teaching staff at the school. Informal reports from coordinators and some individual teachers show that the younger teachers have embraced the concepts, while older teachers may have a harder time changing their current mode of teaching the material in textbooks and testing on the same.

Some teachers may also feel that the no-notes-no-testing initiative is a temporary one and that it would be a waste of time to change their teaching methods.

Overall, teachers have continued to teach all selected non-core subjects through activities and there is no note-giving. All the activities given in the sample lesson plans are being tried out but maintaining the notebook may not be happening as intended. Teachers are unsure about reporting on student progress. It is not clear how well they have got students to maintain their notebooks. The assessments for the non-core essentially about giving a grade for each activity.

A sample set of guiding questions for 'students' notebook in the "Family meal" module, all based on information available in the textbook, is as follows:

1. Note your observations about the following in your notebook - Buying ingredients; Keeping the food in sanitary conditions; Organization of the kitchen with a sketch of the kitchen; Cooking the food; Setting the table and serving the food
2. Review the layout of your kitchen. Is there anything you would do to improve the layout of the kitchen?
3. What other tools would improve meal preparation? Do you think you can make or design something to improve meal preparation?
4. How can you improve the meal preparation at home? Consider lighting, airflow, space, water supply, electricity, tools, height of the workspaces, ease of taking and putting back of items you need for cooking, preventing flies and other insects, and cleanliness, attractiveness of the kitchen?

This module was piloted in the 3rd term of 2021 when teachers were still learning to use the lesson plans. The assessment plan included a grade for answers to each of the above questions that assessed students' ability to understand and apply the knowledge in the textbook as well as assessments about skills specific to the module, generic skills and attitudes and behaviours.

The generic skills included participating, self-directed learning, documenting, presenting (Oral); and working in groups.

Regarding attitudes and behaviour teachers were asked to recognize up to five students or about 10-15% of the students in the class who demonstrate the expected attitudes and behaviours during and beyond the period of the module.

The assessment component of the module has not been formally completed by teachers, though some teachers said they are maintaining the grades in their computers. The kinds of assessments proposed in the present action research are a totally new experience for teachers. The fact that there was to be no requirement to provide report cards for 2021 too may have been a factor. The coordinators have requested additional sessions to help teachers understand and carry out the 'Authentic assessments' given in the sample modules. A meeting is planned for an evaluation and a readjustment of the lesson plans toolkit for the second term of 2022.

The activities in the lesson plans were designed for both face-to-face learning and distance learning- i.e., the lessons were designed for hybrid learning. When the school closed in January to accommodate the holding of the GCE A/L examination, it was a chance to test the efficacy of the hybrid component of the lesson plans. We are yet to collect the data on teachers' use of the hybrid components in the lesson plans.

Discussion

The objective of the action research was to test the efficacy of the EFSL lesson plan toolkit to give an authentic learning experience for students, allow teachers to cover the syllabus and provide a grade assessing student learning in the report cards presented to parents.

Although the implementation period was too short (four months for co-creating and piloting the concept and another three months for implementation) and students had to transition to online learning for one month of the implementation period, the coordinator reported that the teachers continued to adopt the no-note-giving and no-testing policy for non-core subjects and used the proposed activities with enthusiasm. But as stated earlier the difficulty lies in assessing student's learning, especially the topic specific skills and generic skills they acquired, and changes in attitudes and behaviour.

Lastly, what are the implications of the present action research to our understanding of concepts such as self-directed learning, hybrid learning, and authentic learning and assessments.

Self-directed learning

As the world shifted to online education self-directed learning (SDL) became even more important. The support teachers were able to provide was reduced drastically and thus the students who did not have the ability to direct their own learning suffered the most. Students who had good self-directed learning skills were less likely to feel negative emotions during lockdown (Chang et al., 2021). This is likely due to students who lack SDL skills found it difficult to keep up with their studies when they were given less support, suffering the most academically, which not only affects emotional health but can create a crippling negative cycle.

Training students in SDL has shown to improve grades, active participation and students taking responsibility for their learning (Roberson et al., 2021). While a lack of SDL skills can be incredibly detrimental this shows that it is something that can be improved in students if focused on. Therefore, it is important to teach SDL skills. Although teaching these skills in formal education is the best setting, they should be contextualized, which is exactly how the lesson plan toolkit works (Morris, 2021). SDL skills are not taught as a separate subject but rather each teacher plans lessons to help students practice these SDL skills within the context of their lesson and subject.

Hybrid learning

Online or face to face teaching may not be an option if the school is forced into lockdown. Being prepared for an online only version of lessons allows teachers to be more adaptable if things go south. Hybrid learning also allows schools to be more flexible with numbers of students at school at any given time to avoid overcrowding. By encouraging a shift to online resources, we can save paper which is not only helpful for the environment but also becoming a more expensive resource in Sri Lanka. This allows schools to focus their budgets elsewhere while also being more prepared for school closures should they happen again (Crawford et al., 2014)

Web based resources online or CD-ROMs allow students access to knowledge at broader ranges of time than hearing an explanation only during class. More frequent exposure to a topic can be especially helpful for languages where traditional structure of lessons does not provide enough input for learners to listen to native speakers which would be available over the internet (Klimova & Kacetl, 2015).

Hybrid learning also promotes more useful skill development through SDL and project-based learning. This study found that hybrid learning was more effective than traditional lessons at improving students' Advanced Mathematical Thinking ability (Aristika et al., 2021).

Authentic learning

Authentic learning is social and often occurs through shared activities, language and problem solving (Huang-Saad et al., 2020). Authentic learning is at the core of engineering design classes through project-based learning, but with the recent pandemic and significant migration to online learning, instructors need to be even more deliberate in cultivating an authentic learning environment.

Authentic learning is learning that engages students in activities that more closely resembles real life which helps ground the learning within the learner's culture and setting (Istenič, 2021). Social skills are an incredibly important aspect of real-world problem solving and so authentic learning often contains collaborative activities and problem solving (Huang-Saad et al., 2020). This has been done before through project-based learning but with the isolation the pandemic has created, it is more imperative now than ever to utilize authentic learning to develop the technical and social skills students will need upon graduating.

Authentic assessments

Traditional methods of assessment place a large burden and stress on a single set of examinations. Proctoring these examinations online comes with its set of challenges like access to technology that not every student would have. Countries like China have started to question whether these types of assessment are even the best way to assess students. In an assessment of top university enrolment patterns, they found formative

assessment which provides a clear picture of students' ongoing progress throughout the year could assess students in a more comprehensive way and more effectively predict the performance of students (Su, 2020).

Silverman et al. even contemplates whether online proctoring of exams could be an invasion of privacy or allow the potential for discrimination of students (2021). However, online education was taxing on both teachers and students giving learners an excess amount of stress. The added stress and duress of final examinations on top of this was the main impetus for change to a more comprehensive system (Openo, 2020).

Difficulty in planning without guidance

The task of helping schoolteachers change their teaching style and assessment was tackled by focusing on the lesson planning stage. Lesson planning can be an incredibly challenging task for beginning teachers (Bailey, 2014). However, it is "through planning that teachers are able to learn about teaching" (Mutton, Hagger & Burn, 2011). The pandemic has turned the world upside down and brought all teachers back into this similar period of learning and planning. The toolkit was designed to help teachers plan effectively for the current era. That included using modern teaching strategies and assessment, especially those that were beneficial in a post-pandemic world. This would make the quality of teaching much more sustainable as well as the emotional health and wellbeing of staff and students as both groups would become more adaptable and prepared for potential full or partial school closures.

Conclusion

With the world population facing immense challenges of epidemics, economic uncertainty and climate change, education must prepare the future generations to learn to face unforeseen situations. Authentic learning prepares students to situate their learning in real-life context and adapt to new situations.

Preliminary results of our action research on authentic learning post-pandemic shows that the teaching and learning processes can indeed be changed to more authentic ones, but assessment of student learning is a challenge. Present action research will continue for at least another eight months with teachers receiving additional help from EFSL consultants to assess students and prepare report cards for non-core subjects.

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