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A teacher's practice of projects: Scope for improvements

Abstract

The paper reports an analysis of a semi-structured interview conducted with a teacher about her project practice. It was found that she conducted projects on science topics at the middle school level to follow her school guideline. She assigned projects to individual students and did not provide any help while they conducted projects. She only pointed out the mistakes once students submitted their projects and asked them to resubmit it. It was observed that all her projects were designed to collect information and they did not align with the stated learning goals of the project. Similarly, her self-developed assessment criteria did not match with her stated learning goal. The paper points out the scope for improvement in her project practice and ways to integrate such experiences in teacher professional development.

Introduction

National Curriculum Framework 2005 has recommended conducting projects in Indian classrooms (NCERT, 2005). The policy suggestions and subsequent circulars sent by central board (CBSE, n.d.) and several state boards have resulted in frequent assignment of projects in the Indian schools. This has burdened the students, their parents, and teachers alike (Shome & Natarajan, 2013). It is reported in literature that teachers often find it difficult to translate the policy suggestions in their classroom practice (Fullan, 2007). Teachers follow pragmatic approach to fit the policy suggestions in their existing practices in order to reconcile systemic constraints and their own professional incompetency (Bryan, 2003; Guskey, 2002).

For meaningful implementation of policy suggestions it is important to study the teachers' existing practices within the larger social context (Price & McConney, 2013). However, teachers' practice of teaching also depends on teachers' philosophical position on teaching and learning and their personal experiences (Pajares, 1992). Therefore, it is crucial to develop individual teachers' understanding about teaching-learning and initiate a discourse on existing practices. Teachers would not change their belief as well as practices if they do not see the positive changes due to the suggested practices (Guskey, 2002). Therefore, it would be effective to allow teachers to articulate their practices as well as their goals of following such practices. The teachers and teacher educators, individually or in collaboration among themselves can develop meaningful teaching practices to meet the curriculum requirements and the challenges that they may face during this process.

Objectives of the study

The study aimed to explore teachers' existing practice of projects and identify the specific components of practices in order to modify existing practice. The study aimed to know:

1. The influence of NCF 2005 on teachers' conduct of projects,
2. The teachers' ideas about projects, and roles of projects in students' learning,
3. The teachers planning and implementation of projects in terms of a) assigning students their tasks and their expectations from students, b) nature of guidance provided to students, and c) nature of project assessment, and
4. The challenges teachers face while conducting projects.

Research Design

The work reported here followed a case study approach (Yin, 2003) to know the teacher's actual project practice with her students. A 30 minute semi-structured interview was conducted with the teacher (Cohen, Manion, & Morrison, 2007). The questions were mostly open ended and were used to initiate discussion. Researcher generated subsequent questions on the basis of the conversation.

Participant profile: We invited Shubhra (name changed) to participate in the study. She was teaching in a higher secondary, CBSE affiliated private English medium school. She taught general science in class VII and VIII and physics in class IX and X. There were about forty students in her classroom, most of whom hailed from houses from the middle-income group. Their parents were either employed by the government, had their own business or were involved in farming. According to Shubhra, the students' home language was not English and the students received most of the academic support from their school teachers and private tutors. The parents spend adequate amount of money for their children's education. Most of the parents sent their children to private schools assuming that they provided better education than the government vernacular schools.

Data collection and analysis

The interview was conducted in two languages, English and Hindi. The complete interview was audio recorded and later transcribed verbatim. This was also complemented with extensive notes taken during the interview. The analysis of the data is reported under the headings of influence of NCF 2005 in her conduct of projects, ideas about projects, perceived advantages of conducting projects, and plan of projects and its implementation.

Influence of NCF 2005 in the conduct of projects: Being a teacher of CBSE affiliated school, Shubhra conducted projects at middle school level as a part of formative assessment. However, how the project was to be conducted was decided by the respective school. Her school conducted six unit tests in an academic year for the middle school students. Every student had to carry out one project in each unit test.

Ideas about projects and its role on learning: She thought that through projects students "develop their thinking" and they become more creative. She mentioned that during the initial stages, she had to tell her students on how to do the projects. But after one or two projects, students came up with their own ideas. She also said that in projects, students work on their own and therefore, they understand better.

> *"… project has advantages … see, in project we just guide them. Children labors on their own … do activity on their own … do practical on their own. Then they understand better. That seats in their brain better … if we just dictate them or elaborating … it is a little difficult for children to understand … in projects, they developed mentally … develop their thinking power a lot."*

Shubhra equated project work with practical work. She did not assign projects to the high school students, even though the circulars asked teachers to conduct project at this level as well. However, in her school, high school students were engaged in making models with some explanatory write up for exhibition purposes. With reference to one of her projects on *Types of soil* assigned to students, she elaborated that in the project, students see the soils "practically". Therefore, they understand better than just explaining the properties and types of soil.

Plan of projects and its implementation: Shubhra's plan of projects and her implementation of projects are described under the headings of a) assigning students their tasks, and her expectation from the students b) nature of guidance provided to students, and c) nature of project assessment.

(a) Assigning students tasks and expected students' productions

The projects were based on the chapters that were covered in the particular unit test. After completion of the chapters, she asked her students to collect more information on the same topic and

at times, collect samples wherever applicable. Students were supposed to stick the samples on the project report. The teacher explained her project practice in the following words:

> *"According to our rule, for every unit there should be a project. Suppose in one unit test first and second chapter is coming. So, there should be project on first and second chapter. Now, suppose, first chapter is something related to soil … So, generally we tell the students … we explain the chapter to them and then we tell them … you just collect as much as information you can regarding this type of soil … plus if you can collect the samples. Stick it on your project report."*

Her other project examples included project on *Fiber to fabric*, *Collecting vegetables*, and *Acids in different fruits*. A brief description of each of the three projects are given below:

Fiber to fabric: After teaching the chapter "Fiber to fabric" she asked her students to collect various samples of fibers, stick them in their note book and write the characteristics of each of the fiber.

> *"… we just gave them the project for second test … see, these many fibers we have … you just bring the sample of these fibers, as much as, you can find … stick it in your book and … write the characteristics."*

Collecting vegetables: In this project, students of Class VIII were asked to bring real vegetables or photographs of the vegetables and stick them in their report or a chart, and write whether they are Kharif or Rabi crops.

Acids in different fruits: In this project, students were asked to collect the names of the fruits that contain acids. They were supposed to paste the pictures of the fruits and had to write down the corresponding acids found in that particular fruit.

All her projects were assigned to individual students. She found it easy to grade students if projects were done by them individually. Shubhra observed that students generally collected information either from books or from Internet. Students' parents helped them in collecting samples. Her school did not have Internet connection, but many students had computer and Internet connection in their home.

(b) Nature of guidance provided to students

She stated that students did most of the projects with the help of their parents. She only corrected their projects and sometimes gave inputs for improvements of the final product. She cited an example, where one student had put the sample of sandy soil and described it as clay. She asked the student to touch the soil and feel its texture and that the collected sample was in fact sandy and not clayey. In some projects, she helped her students by collecting information from library. Students noted down the information and later presented it neatly with suitable sample in the project report (she called it "project file").

> *"… I just go to library, take the information, and what I can … what knowledge I have, just give it to them … that … these are the some of the characteristics. So, they note it down (neatly) … in a project file."*

(c) Project assessment

She assessed her students based on certain criteria that she developed on her own. These were a) number of characteristics listed, b) appropriateness of sample collected, and c) neatness. She also mentioned that she used her judgment on whether the student had understood the characteristics. The researcher questioned her on how would she get the feeling that students have understood the characteristics, for which she replied that she assessed the students' understanding on the basis of samples they collect. This criterion was identical to her "*appropriateness of sample collected*" norm. The following conversation gave a clear picture of her assessment scheme:

> *Shubhra: See, if they have written all the characteristics and I mean the collection is correct, everything is correct … and if we feel like that … the student has understood the characteristics …*
>
> *Researcher: How do you know that they have understood?*

Shubhra: Because, if they have understood the characteristics then only they can bring the correct soil. Right? If they have not understood the characteristics then how they can bring the correct … When they will understand that sandy soil is like this … it is a little smooth … once they will understand … then only they will collect … so, based on that, we give the marks.

Interestingly, it was not necessary in her projects that all the students would get the same score even when they all brought the correct sample along with the relevant information. Their grades were also based on neatness. Her idea of neatness and rationale for keeping neatness in the assessment scheme was elaborated in her following statements:

"… if there is a project … that means it should be a full fledged project … it should not be a time pass work. Everything should be systematic. Neatness should be there. Maximum points should be there … plus the samples, the collection should also be there … how much attractive you can make with all the correct information … we give the marks … Keeping all these criteria in mind, because, the main idea is … they should understand the value, that what is the value of project, in that way they can be more creative. Like making drawings and underlining the things all these things should … I mean … it should be like that."

She did not provide any feedback to her students while they do the projects. Once they submit their projects, she pointed out the mistakes they have committed. The students corrected the mistakes and brought the next day. According to Shubhra, students always wrote correct theory but they made mistakes in collecting samples.

"Because, generally what happens, theory part they always write correctly … but when it comes to the collecting … experimental part … when it comes in collecting the samples and all … that time they make the mistake. So, we just tell them that see silk you have sticked here and here cotton characteristics are written. So, you just compare it, is it cotton? If they can then it's fine. Otherwise, I will explain them that see this means this, this means this, that means it is not fulfilling these things, it is not cotton. Simple."

Challenges in conducting projects

Shubhra considered that checking projects in addition to the regular class assignments was a burden. Further, projects took longer time than regular lecture based class. However, she felt that students learn better through projects, therefore, the challenges were acceptable for her.

Everyday Shubhra took five periods in four classes. She assessed students projects during the "zero periods". During "zero periods" students were engaged in activities like preparation for school functions. The teachers not involved in such activities got time to grade the students' projects. Sometimes, she asked her students to stay for some time after school hours to grade the projects.

"Generally we have zero periods and all. At those time students are involved in activities, like preparations of functions and all. So, at that time generally we check the projects … the teacher, who are free … that time keep on checking the project … whenever there is a free period for us."

Due to the lack of time, grading students' projects were delayed. In some cases, students started studying another chapter. However, Shubhra did not find any problem in the grading process being delayed. For her, she had already pointed out the mistakes during the submission of projects and had asked her students to resubmit after suitable corrections. Further, she pointed out that all students were not able to collect information. She attributed students' "mental level" with the ability to collect information and only "some fine bright" students could do the projects without teacher's help.

Discussion

Shubhra conducted projects to follow her school guidelines. She did not refer to the teachers' manual published by CBSE on formative and summative assessment (CBSE, n.d.). She found that projects help students to develop their ability to think creatively. Interestingly, all her project assignments involved collecting samples, pasting them in a note book, and presenting the information neatly. All her stated tasks at the most helped students to gain new information. It was clear from the task description that there was little scope to engage with generating any new knowledge or solving any problem. It was important to note that Shubhra had limited the scope of students' creative thinking in a narrow context of "neatness".

She also thought that projects help students to gain practical knowledge as they were doing something on their own. However, she also observed that almost all students could reproduce correctly the "theory" part. It was interesting that she herself ensured that students were informed about the relevant information either through regular classroom teaching or providing more information informally after school hours. However, she had equated this information as theoretical knowledge.

For example, in *Fiber to fabric* project, she had already informed students about the characteristics of fiber without engaging students in hands-on experience. There was a missed opportunity to bring practical experiences in deriving the knowledge about the characteristics of the fiber. To engage students in order to develop practical knowledge, the students could have been given different fibers in the classroom. They could be asked to list all the similarities and differences they found and suggest experiments that would test their hypothesis. In the next class, the teacher could or would? would conduct the experiments. Alternatively, teacher herself could bring the fibers in her classroom, design some tests to compare the properties of the fibers and ask students to perform the tests under her guidance.

Unfortunately, in her approach, students received information without a meaningful context.

Another project assigned by her, on *Types of soils* was similar to the project on *Fiber to fabric*. Here the crucial issue was, the types of soil described in the textbook were not necessarily corresponding to the soil found in some particular region. In nature, soils are found mostly as mixture. It is noteworthy that the textbook classification of soil is quite simplistic and does not necessarily correspond to the real world. The textbook content is derived from the generalization of the pattern found in nature for better understanding. Here, teacher could allow students to investigate different kinds of soils in the school and discuss about them. It is possible that students would come out with a better understanding about soil and generate their knowledge about soil rather than regurgitating textbook information.

The project on *Collecting vegetables* and writing them whether they were Kharif and Rabi seemed to engage students in a simple task and underestimating students actual ability. Before conducting the projects, teachers are required to write all the learning goals they are expected to cover through the project. If students' efforts and investment of time does not justify the breadth and depth of learning taking place from such engagements, teachers need to reflect on their practice. Shubhra's project on A*cids in different fruits* also fall in the same category.

Her perception about knowledge and creativity also influenced her in guiding students and assessing the projects. Equating information with knowledge led her to conclude that her students rarely made any mistakes in "theory". On the other hand, she believed that all her students do not have the "mental ability" to collect information.

It is well accepted that students can construct knowledge from engaging in meaningful group activities with the help of teacher (Shome et al., 2011). Interestingly, Shubhra's project practice needed to be articulated properly to find possibilities of such knowledge construction for students with varying abilities and contexts.

Conclusion

The study reported a teacher's project practice and the scope of improvement in her existing practice. The findings of the study cannot be generalised for all the teachers conducting projects in their respective classrooms. However, it throws some light on the current school project practices and ways of developing better teaching practice from the existing practice. The study also failed to explore the teacher's understanding about knowledge, theory of knowledge construction, goals of education and teaching-learning in detail. The study made no attempt to observe her actual classroom practice, which would have provided a better picture of her project practice. However, the interview attempted to elicit several of the classroom components up to an extent which had enough clarity to infer from the conversation alone.

The study pointed out the need of an urgent investigation of the project practices in schools. It is important to articulate the teachers' practice of project in teacher professional development. This articulation would help teachers and teacher educators to construct a new meaning for conducting projects. A sustained discourse between the community of teachers and teacher educators would modify their existing practices and help them in finding meaning in their own actions.

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