

## **PM SHRI KENDRIYA VIDYALAYA SECTOR 2 R K PURAM**

### **Innovation Report 2023-24**

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### **“Catalysing biology lessons of NCERT textbook of senior secondary classes through QR codes”**

#### **Rationale of the study**

In the year 2015, National Council of Educational Research and Training (NCERT) was recommended to revamp the educational curriculum by introducing mobile learning (Ravi, 2020). In 2017, NCERT initiated DIKSHA, Further, in the year 2018, with an aim to facilitate quick and simple understanding of the content, NCERT digitized textbooks by introducing four-digit QR codes for the NCERT syllabus

#### **Preparatory work**

The preparatory work involved sample selection and development of QR codes.

#### **Sample selection**

For this project, senior secondary male and female students from 12<sup>th</sup> grade of our vidyalaya were selected.

#### **Development of QR codes**

To conduct the present study, QR codes were developed on the contents of Unit titled “Biotechnology Principles and processes”.

## **Objectives of the study**

The objectives of the present study were as listed:

- To develop a pedagogical strategy for teaching biology lessons for senior secondary students using QR code digital technology.
- To investigate the impact of QR code digital technology on the accomplishment in biology of senior secondary students.
- To examine the impact of QR code digital technology on the attitude of senior secondary students towards biology.
- To examine the impact of QR code digital technology on the accomplishment in biology of belonging to different socioeconomic background

## **Experimental design**

The adopted experimental design consisted of evaluation of pre-test and post-test scores for both control and experimental group.

### **Stage 1: Item selection analysis**

### **Stage II: Pre-test, intervention, and post-test**

### **Stage III: Questionnaire for the experiment group**

## **Reliability and validity statistics of questionnaire**

The unbiased nature (reliability) of the questionnaire was tested using Cronbach's alpha method. The Cronbach's alpha value closer to 0 indicates lack of consistency while values closer to 1 indicate high internal consistency of scales.

## **Data analysis**

The collected data was statistically analysed using SPSS software v24.0.

## **Limitations of the study**

The development of QR codes (video lessons) was confined to one Unit of the biology subject. Besides, the study was limited to senior secondary students of grade 12<sup>th</sup> from Kendriya Vidyalaya's sector 2 R K PURAM.

## Results

The pre-test and post-test score showed significant differences in the experimental group suggesting promising results of integration of QR code to biology. The analysed data showed that integration of QR code to biology lessons significantly improved students' attitude. Students exhibited higher engagement, interest and motivation towards biology. different subjects

## Conclusions and Implications

The outcome of this study has implications for educators, teachers, parents, students and school authorities. The findings encourage educators and school authorities to integrate QR code digital technology in the senior secondary level to arouse students' interest in biology and further extend the perceived usefulness of QR code in the learning of other science subjects. In addition, the education policy should design a comprehensive platform to integrate QR code from primary level to postgraduate level. Since QR code digital technology depends on the availability of technological devices, school authorities must ensure the provision of QR code compatible devices to access QR code for students of all socio-economic status.