

Effectiveness of Google Classroom as an online Tool in Teaching and Learning: B.Sc. (Nursing) Student's Perception

S. Ani Grace Kalaimathi

Registrar, Tamil Nadu Nurses & Midwives Council, Chennai.

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Abstract

Introduction: The global Covid-19 pandemic led to the need for educators to explore online platforms in delivering lessons to students. It has impacted the way things are done in walks of life including nursing education in both developing and developed countries.

Methods: A descriptive correlational study was conducted to determine the effectiveness of Google Classroom (GCR) as an online Tool in Teaching and Learning: B.Sc (Nursing) Student's Perceptions using survey approach among 20,000 undergraduate nursing students studying 1st year to final year in more than 208 nursing institutions. The students were selected using purposive sampling technique. After obtaining permission and informed consent from the participants, data was collected using pretested and validated tools such as background variables proforma of nursing students and rating scale on effectiveness of Google classroom in improving the learning outcomes of the students using Google forms through WhatsApp and e-mails. The collected data was analyzed using descriptive and inferential statistics.

Results: Most of the students had positive perception with overall mean and standard deviation showing effectiveness of GCR as an online tool $m=81.64$, $SD=10.41$.

Conclusion: Implementation of online learning in Nursing education has been perceived favorably by majority of the students. It is important for instructors and institutions to consider the needs and preferences of their students when designing and delivering courses, and also to provide adequate support and resources to ensure that students are able to have an innovative learning experience.

Keywords: Google Classroom, Online Tool, students' perception Teaching and Learning Outcomes

Introduction

The education system has faced severe trouble worldwide in COVID-19 pandemic since the beginning of 2020. In this context every educational institute including nursing colleges has adopted E-learning for smooth continuation of teaching learning process. The educational system has vastly affected due to COVID 19 pandemic situation along with the effect on human life over 3.91 crore people across the globe. UNESCO highlighted that in India, around 32 crores college students are suffering with their learning process due to this pandemic.¹

American Nurses Association (ANA) had suggested in 2010 that, online, virtual, simulated and competency-based learning should be attempted in educational institutions to expand opportunities to students and increase efficiency of nursing students². To minimize the impact of lockdown, medical schools and colleges had to find another approach to teach medical students.

Fortunately, current technology enabled electronic learning (e-learning) to be the core method of teaching the curriculum during the COVID-19 pandemic³. Google Classroom is a free application

Corresponding Author: S. Ani Grace Kalaimathi, Registrar, Tamil Nadu Nurses & Midwives Council, Chennai.

E-mail: anniekalai1@gmail.

designed by Google to assist students and teachers connect, work together, organize and create assignments, it enables learning to be paperless. As a digital tool, Google Classroom is accessible only to users with Google Apps for Education (GAFE). This is a free collaborative set of tools, these tools include web tools like Google Docs, Google Drive, Gmail, and more. All users with GAFE account, have access to these web tools. Google Classroom can be used at any grade (basic, post basic and tertiary) levels, but this depends on the teachers' and students' competence.⁴

GCR has the ability to create classrooms in a virtual world manage classes and communicate with students without being tied to class schedules. In addition, teachers can give assignments and directly give grades to students. E-learning is learning by utilizing internet technology which has rich content with a broad scope. This study on effectiveness of GCR as an online tool and the perception of nursing students needs to be understood, as very little information exists about the experiences of nursing students regarding online classes in India. This study was done so that the learning experience can be improved for the benefit of students.

Statement of the Problem

A Descriptive Correlational Study to Assess the Perception of B.Sc. (Nursing) Students on Effectiveness of Google Classroom as an Online Teaching and Learning Tool.

Objective of the Study

To assess the effectiveness of Google Classroom as an online teaching and learning tool and perception among college students.

Research Methodology

A descriptive correlational study was conducted in Tamil Nadu using survey approach among 20,000 undergraduate nursing students studying in 208 nursing institutions. The population consisted of all undergraduate nursing students from first year to final year, they were selected by purposive sampling technique. After obtaining the permission and informed consent from the participants, data was collected using pretested and validated tools such as background variable proforma of nursing students that included gender and year of study and Rating scale to assess the perception of students on effectiveness of Google classroom in improving the learning outcomes. Data was collected using Google forms sent through WhatsApp and e- mails. Rating

scale consisted of 5 sub components such as access and attentiveness towards learning, knowledge and skills gained through GCR, meaningful feedback to students, communication and students' limitations with 20 items rated in a 5-point rating scale (Strongly Disagree-1, Disagree -2 Neutral-3 Agree-4 and Strongly Agree-5). The collected data was analyzed using SPSS-21 and presented in tables and diagram.

Results and Discussion

Table 1: Distribution of Background Variables among Nursing Students (N=17,297)

Demographic Variables	Nursing Students	
	f	%
Year of Study		
a. I year	2062	11.9
b. II year	4300	24.9
c. III year	5550	32.1
d. IV year	5385	31.1
Gender		
a. Male	2016	11.7
b. Female	15281	88.3

Table 1 depicts the percentage distribution of background characteristics of nursing students less than 50% of the students i.e. 32.1% (5550) and 31.1% (5385) nursing students were studying third year and fourth year respectively.

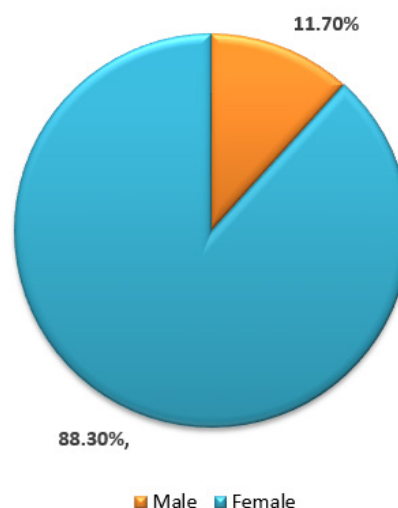


Fig 1: Percentage Distribution of Nursing Students

Fig 1 depicts that majority of nursing students 88.3% (15,281) were females.

Table 2: Item Wise Analysis of Students' Perception on use of GCR in Improving their Access and Attentiveness towards Learning (N=17,297)

Items	Strongly Agree	Agree	Doubtful	Disagree	Strongly Disagree
	n (%)	n (%)	n (%)	n (%)	n (%)
Adequate training	6055(35)	9046(52.3)	1840(10.36)	262(1.5)	94(0.5)
Enhanced critical thinking ability	4167(24.1)	9317.(53.9)	3212(18.6)	463(2.7)	138(0.8)
Improved class attendance	5311(30.7)	8129(47)	3047(17.6)	616(3.6)	194(1.1)
Easy access to class notes	6015(34.8)	8355(48.3)	2345(13.6)	442(2.6)	140(0.8)

Table 2 reveals that more than half of the students felt that they had adequate training to use GCR (52.3%), 53.9% felt their critical thinking skills was

enhanced, 47% had improved attention and 48.3% had easy access to class notes which was shared in GCR.

Table 3: Item Wise Analysis of Students' Perception on use of GCR in gaining Knowledge and Skills. (N=17,297)

Items	Strongly Agree	Agree	Doubtful	Disagree	Strongly Disagree
	n (%)	n (%)	n (%)	n (%)	n (%)
Assignment is easily viewed	6517(37.7)	8653(50)	1579(9.1)	403(2.3)	145(0.8)
collaborative learning	4677(27)	9476(54.8)	2450(14.2)	529(3.1)	165(1)
Innovative and educational tool	5732(33.1)	8756(50.6)	2215(12.8)	436(2.5)	158(0.9)
Independent learner	6043(34.9)	8636(49.9)	2023(11.7)	416(2.4)	179(1)

Table 3 depicts that more than half of the students 50% agreed that class work/assignments could be easily viewed, 54.8% felt the learning was

collaborative, 50.6% had reported that GCR was an innovative and educational tool and 49.9% agreed that GCR made them to be an independent learner.

Table 4: Item Wise Analysis of Students' Perception on use of GCR in providing Feedback to Students. (N=17,297)

Items	Strongly Agree	Agree	Doubtful	Disagree	Strongly Disagree
	f (%)	f (%)	f (%)	f(%)	f (%)
Presence of guardians	5047(29.2)	9166(53)	2644(15.3)	333(1.9)	107(0.6)
Effective record keeping	5540(32)	8960(51.8)	2337(13.5)	353(2)	107(0.6)
Due dates	5047(29.2)	9166(53)	2644(15.3)	333(1.9)	107(0.6)
View their scores online	5394(31.2)	8664(50.1)	2826(16.3)	300(1.7)	113(0.7)
Track their progress regularly	4835(28)	8997(52)	2993(17.3)	349(2)	123(0.7)
Resubmitting of assignments	5217(30.2)	8791(50.8)	2769(16)	374(2.2)	146(0.8)

Table 4 shows that more than half of the students felt that presence of guardians helped them to study seriously (53%). GCR helped in easy and effective record keeping (51.8%), 53% could identify the due

dates easily, view their scores (50.1%), and track their progress regularly (52%), 50.8 percent of students reported that editing and resubmitting assignments helped them to make necessary changes later.

Table 5: Item Wise Analysis of Students' Perception on use of GCR in Communicating with Students (N=17,297)

Items	Strongly Agree	Agree	Doubtful	Disagree	Strongly Disagree
	f (%)	f (%)	f (%)	f (%)	f (%)
Up to date Knowledge	5467(31.6)	9196(53.2)	2237(12.9)	294(1.7)	103(0.6)
Higher Scores in online than in a normal classroom	4861(28.1)	8553(49.4)	3046(17.6)	624(3.6)	213(1.2)
Everywhere & anytime learning	5969(34.5)	8578(49.6)	2275(13.2)	346(2)	129(0.7)

Table 5 reveals that more than fifty percent of students were able to update their knowledge (53.2%), score higher marks through GCR than

normal classroom (49.4%) and learning took place everywhere, any time (49.6%).

Table 6: Item Wise Analysis of Students' Perception on Limitations towards GCR (N=17,297)

Items	Strongly Agree	Agree	Doubtful	Disagree	Strongly Disagree
	f (%)	f (%)	f (%)	f (%)	f (%)
Network issues	6280(36.3)	8052(46.6)	2252(13)	501(2.9)	212(1.2)
Lack of money	5650(32.7)	8067(46.6)	2641(15.3)	661(3.8)	278(1.6)
No personal computers or a smart phone	4602(26.6)	7224(41.8)	3133(18.1)	1628(9.4)	710(4.1)

Table 6 depicts that less than fifty percentage of the students reported that they faced network issues (46.6%), financial issues to buy personal computer

(46.6%) and 41.8% had difficulty to recharge their phones.

Table 7: Overall Mean and Standard Deviation of Student's Perception on Effectiveness of GCR as an Online Tool (N=17,297)

Items	Mean	Mean %	S. D	Min	Max
1 Access and attentiveness towards learning	16.34	81.7	2.49	4	20
2. Knowledge and skills gained through GCR	16.53	82.65	2.58	4	20
3. Meaningful Feedback to Students	24.50	81.66	3.70	6	30
4. Communication	12.28	81.86	1.91	3	15
5. Students Limitations	11.96	79.73	2.20	3	15
Overall	81.64	81.64	10.41	20	100

Table 7 reveals that majority of students had positive perception with overall mean score of 81.64 $\pm$ 10.41, domain wise mean and standard deviation of effectiveness of GCR as an online tool. With regard to improving students' access and attentiveness towards learning mean value was 16.34/20 with SD 2.49, knowledge and skills gained through GCR mean value was 16.53/20 with SD 2.58. Meaningful feedback to students was 24.50/30 with SD 3.70. Google classroom made communication with students easy to accomplish with the mean value of 12.28/15 with SD 1.91. Students' limitations towards using GCR mean value was 11.96 with SD 2.20.

Discussion

Technology integration is a benefit for students to learn differently to achieve goals. GCR is a trend of blended learning in education that changes the strategy of delivering learning and teaching. The use of digital technologies in education, complements the traditional approach of teaching.⁵ This study explored the perception of students on GCR as a good e-learning tool used in teaching and learning.

The present study findings revealed that more than half of the students felt that they had adequate

training to use GCR (52.3%), 53.9% felt their critical thinking skills was enhanced, 47% had improved attention and 48.3% had easy access to class notes which was shared in GCR. These findings are consistent with the findings of the study conducted by Muslimah (2018)⁶ which indicated that students felt that GCR was useful and they were satisfied using GCR as an online learning tool. Nizal, et al (2016) also found that students were satisfied using GCR, and reported it as an effective learning tool. Hence, it is well established that GCR was led to a positive perception among the students.⁷

A study was conducted to determine the requirements for the development of learning that is exciting, active, autonomous and effective. Integrated learning design using GCR is needed to improve student digital literacy. In this study more than half of the students 50% agreed that class work / assignments could be easily viewed, 54.8% felt the learning was collaborative, 50.6% had reported that GCR was an innovative and educational tool and 49.9% agreed that GCR made them to be an independent learner, 53% felt that presence of guardians helped them to study seriously. GCR helped in easy and effective record keeping (51.8%), identify the due dates easily (53%), view their scores (50.1%), and track their progress regularly (52%), 50.8% of the students reported that editing and resubmitting assignments helped them to make necessary changes later.⁸

There are many benefits of Google Classroom reported by If takhar in 2014 such as it is very easy to use, designed as an interface to deliver and track assignments and communication with the course simpler through the announcement, email, and push notification⁹. The process of administering document distribution, grading, giving formative assessment, and giving feedback is simplified and streamlined, so it saves time. It is flexible, can be accessed freely by signing up for a Google Account. GCR is mobile friendly that is designed to be responsive. Google Classroom facilitates collaborative learning. A teacher can upload materials and give feedback to students. The GCR platform has been effective in completing the course work and in the formative evaluation of students.⁹

The global education development agenda reflected in the Goal 4 (SDG4) of the 2030 agenda for Sustainable Development, adopted by India in 2015 seeks to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030. Such a lofty goal will require the entire education system to be reconfigured to support and foster learning, so that all of the critical targets and goals (SDGs) of the 2030 Agenda for Sustainable Development can be achieved.

Majority of students had positive perception with domain wise mean and standard deviation of effectiveness of GCR as an online tool. With regard to improving students' access and attentiveness towards learning mean value was 16.34/20 with SD 2.49, knowledge and skills gained through GCR mean value was 16.53/20 with SD 2.58. Meaningful feedback to students was 24.50/30 with SD 3.70. Google Classroom made communication with students easy to accomplish with the mean value of 12.28/15 with SD 1.91. Students' limitations towards using GCR mean value was 11.96 with SD 2.20. These limitations need to be recognized and rectified for more efficient use of the GCR.

An exploratory study was conducted to investigate whether this application will support learning a Bachelor level of English Language Education program to facilitate student achievement. The test design used to analyze student performance and the survey on perceptions of the use of Google Classroom was evaluated statistically using a questionnaire. The results revealed that students who participated in answering questions at the pretest showed no significant difference between the control group (45%) and experimental group (45.45%). In the posttest results, the two groups obtained an increase within the value of the final examination, however the contribution of 5th-semester students with the utilization of Google Classroom specifically benefited those with higher grades (81.82%) compared to third-semester students (70%). Moreover, the results of the student perceptions survey during this study indicated that the use of Google Classroom was observed positively as a technology which will modernize dynamic learning and engagement, stimulate critical thinking and their participation if used suitably for learning functions.⁸

The students' access and attentiveness were greatly enhanced through GCR. Students are able to learn within the optimal time and pace while the limitations are minimal. The perception of students on online teaching and learning can vary widely depending on factors such as their previous experience with online learning, their access to technology and internet connectivity, and their individual learning styles. Findings of this study indicates that more than fifty percent of students reported that they were able to update their knowledge (53.2%), score higher marks through GCR than normal classroom (49.4%) and learning took place everywhere at any time (49.6%). Less than fifty percentage of the students reported that they faced network issues (46.6%), financial issues to buy personal computer (46.6%) and 41.8% had difficulty to recharge their phones.

Many students found online learning to be convenient and flexible, allowing them to work at their own pace and on their own schedule. They may appreciate the ability to review lectures or course materials multiple times to reinforce their understanding of the subject matter. However, some still struggled with online learning due to a variety of reasons like feeling isolated or disconnected from their peers and instructors. Technical difficulties or issues with internet connectivity also impacted their ability to fully engage with the course material.

Conclusion

The findings of this study proved that Google Classroom enhances the teaching and learning process. It is also reliable, effective and efficient in improving students' access and attentiveness towards learning, activities conducted in Google classroom changes students from passive to active learners. Furthermore, the findings asserted that the students have a positive perception of the use of Google Classroom. Overall, it is important for instructors and institutions to consider the needs and preferences of their students when designing and delivering online courses, and to provide adequate support and resources to ensure that students are able to succeed in their online learning experiences.

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