Perceptions, ICT Competencies and Barriers of Flexible Learning

Alquizalas, Junah I, Crismundo, Kimberly Alaica G, Lagura, Jessebelle V, Maimad, Raquilyn B, Maksal, Sophia A, Momo, May Ann A, Sailanie, Neshrin L, Selgas, Gladdish M, Taculod, Doovie Mavyll L.

1Student, Southern de Oro Philippines College, junah.igoy@gmail.com
2Student, Southern de Oro Philippines College, crismundokimberlyalaicag@gmail.com
3Student, Southern de Oro Philippines College, lagurajessebelle@gmail.com
4Student, Southern de Oro Philippines College,maimadraquilyn@gmail.com
5Student, Southern de Oro Philippines College, sophiamaksal0315@gmail.com
6Student, Southern de Oro Philippines College, mayannmomo23@gmail.com
7Student, Southern de Oro Philippines College, neshrinlsailanie@gmail.com
8Student, Southern de Oro Philippines College, gladdishselgas2021@gmail.com
9Student, Southern de Oro Philippines College, taculoddoviemavyll@gmail.com

ABSTRACT

This study aimed to determine the perceptions, ICT competencies and barriers of flexible learning of teachers in Southern de Oro Philippines College. It employed the correlational design and purposive sampling. This was conducted among 40 instructors of Southern de Oro Philippines College school year 2021-2022. The statistical treatments used were the mean, standard deviation, and Pearson Coefficient of Correlation. The teachers are moderately favorable with the flexible learning modality and are competent when it comes to the ICT competencies. Unstable internet connections due to inclement weather and the lack of gadgets for learners and teachers are the serious challenges met by the faculty in the implementation of flexible learning amidst the pandemic. The perceptions of the teachers are statistically related to the barriers they encountered in the implementation of flexible learning. On the other hand, the ICT competencies of the teachers are not statistically related to the challenges they encountered

Keywords: *Perceptions, ICT Competencies, Flexible Learning*

INTRODUCTION

As a result of the global epidemic, the educational system immediately addressed the issue of student learning. The pandemic's influence altered the trajectory of providing quality education to students. The COVID-19 epidemic has created tremendous economic, social, and political issues around the world, as well as an educational catastrophe. 87 percent of the world's lockdowns and quarantines impacted the student population, with 1.52 billion kids skipping school and other educational institutions (UNESCO Learning Portal, 2020). COVID-19's suddenness, ambiguity, and volatility forced the educational system to react quickly to the new learning landscape.

Apart from this, teaching has become connected with the accessibility of broadband, knowledge and understanding of technology and the ability to control student behaviour and motivation remotely (Coleman, 2021). Although students are the most favorable aspect, other members of the class, such as teachers, have mixed opinions regarding an online class. Teachers should assess what is now taught by analyzing what is already available and determining the best technique for presenting the process to ensure a complete understanding of the course. "Faculty perceptions," "training," "mentoring," and "best practices" (Agustina and Cahyono, 2017; Dja'far et al., 2016). According to Ballew (2017), 74% of K-12 online instructors believe that a promotion development program should be incorporated to the school program to help teachers improve their teaching abilities.

Flexible learning is defined as the utilization of a variety of instructional modalities, platforms on the internet and digital or printed modules under the new structure, universities and colleges will use a number of different learning and teaching methodologies based on their unique circumstances. More advanced colleges will implement all online courses, while others may allow some students to return at different times and engage in more synchronous vs asynchronous learning. (Rojas, 2021).

Moreover, studies have suggested that flexibility is considered beneficial to online instruction (Gillingham & Molinari, Soffer, Kahan, & Livne, 2017) and constitutes a key factor in students' enrolment in online courses (Jaggars, 2014). Those who want to enhance their resume by getting higher education and without breaking their existing job then distance learning can be the greatest option for them. Teachers can go on earning their livelihood along with enhancing their qualification as distance learning will serve both learning as well as earning (Brown, 2017).

Therefore, the flexibility of online learning itself grants for more self-discipline and also assists students to gain life skills that they can later apply within the workplace. This is something that is often abandoned in traditional education whereby students disorganize self-growth whilst having to constantly attend classes. Being able to illustrate that they have gained these skills through online learning can ultimately contribute to the student acquiring a more senior position within an organization. Therefore, flexibility itself has a vast impact on the way that students are learning so it is enticing nature has complete validity. Providing an individual with the option of how they learn is fundamental to their success (Holden, 2016)

FRAMEWORK

This study is guided by Lev Semyonovich Vygotsky's social constructivist theory which believes that professors support students in expanding their knowledge and managing their presence during the learning process.The zone of proximal development (ZPD), which emphasizes the importance of the teacher in an individual's learning, is one of Vygotsky's basic notions in his social constructivism theory. The ZPD implies that, with the help of an instructor, students are capable to understand and master knowledge and skills that they would not be able to do on their own (Schreiber 2015).

Undoubtedly, it is impossible to overestimate the importance of the teacher's role in the learning process. The teacher's role, according to this concept, is to try to understand how pupils interpret knowledge and to advise and support them in refining their understanding and interpretations in order to avoid early misconceptions and improve the quality of knowledge provided. Once the students conquer a particular skill they are able to complete it independently. In this theory, the instructor plays an integral role in the students' gain of knowledge, rather than serving as an inactive figure (Chen, Schreiber & 2015).

Flexible learning is an adaptive idea that is difficult to interpret due to its numerous properties, according to the literature on the subject (Garrick & Jakupec, Soffer, Kahan & Nachmias, 2019). A variety of information and communication technologies should be provided to instructors for flexible learning, and teachers should have access to alternative technologies, according to a technology-centered perspective. Teachers should be provided flexibility in terms of time, space, modifying learning tactics, and choosing learning resources and evaluation activities, according to a pedagogically teacher-centered viewpoint (Flannery & McGarr, 2014; Nikolov, Lai, Sendova, & Jonker, 2018).

Flexible learning, according to Naidu (2017), is a state of being in which learning and teaching are more emancipated from the constraints of time, place, and pace of study. Flexible learning, claims as a merit principle rather than a form of study. Flexible learning refers to more than the use of technology to overcome constraints in the classroom (Li & Wong, 2018).

Additionally, the constructivist theory of Jean William Fritz Piaget states that students are given tools to construct their own knowledge. Constructivist learning ought the educators to embrace the idea that each learner will construct, secure, and interpret their own knowledge differently. Constructivism is an active process and permits the students to make sense of their world (Adams, 2015). Constructivists think that knowledge is constructed socially: using language and everybody has individual social experiences arise in multiple realities (Kanuka & Anderson, 2015).

This is dominant when sustaining a constructivist classroom while integrating technology. Educators need to understand that learners will require a variety of different experiences. Also, activities need to be incorporated so that learners experience real world relevance while using technology. One benefit of using technology for instruction in today's world is that communication technology has agreed for constructivists principles to still be continued; constructivists see technology as a dynamic learning tool.

Costs and motivators, feedback and instructor contact, student support and services, alienation and isolation, lack of expertise, and training are some of the problems and challenges that students face. Flexible learners are more likely than standard students to be hesitant about learning (Knepper, 2015). Financial costs of study, disturbance of family life, perceived irrelevance of their studies, and lack of support from employers are all factors that contribute to insecurity. As a result of these oppressions, dropout rates among conventional students are generally higher (Sweet,2015). In this study, the variables are categorized into dependent and independent variables, the independent variables include the perception and ICT Competencies, and the dependent variable includes the barriers of flexible Learning.

SCHEMATIC DIAGRAM OF THE STUDY

Independent Variables

Dependent Variables

Perceptions ICT Competencies	⟹	Barriers of flexible learning.
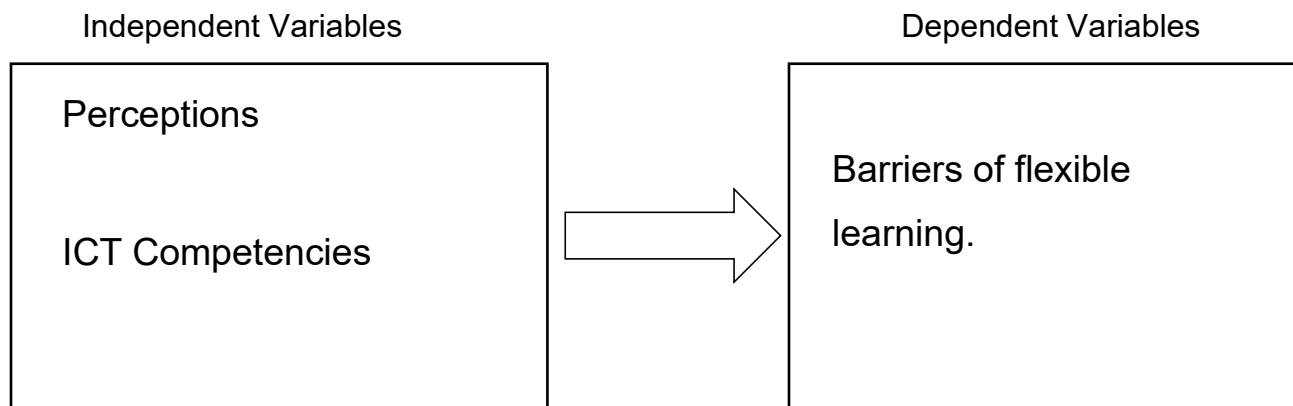
STATEMENT OF THE PROBLEM

This study attempted to determine the Perception, ICT Competencies and Barriers of Flexible Learning. Specifically, this study aimed to answer the succeeding questions.

1. What are the perceptions of the teacher-respondents towards flexible learning?
2. What is the level of ICT competencies of the teacher-participants?
3. To what extent is the level of barriers encountered by teachers in implementing flexible learning?
4. Is there a significant relationship between the level of barriers in implementing flexible learning and perception and ICT competencies of teachers?

RESEARCH DESIGN

This study used correlational design. The correlational design is chosen as the most appropriate design since this research correlates the Perception and ICT competencies to the barriers of Flexible learning. It is decided to employ the correlation method in this study because it is intended to look into the relationship between the variables (Arkunto, 2017). The correlation coefficient is a measure of how closely two variables are related. According to Creswell, in correlational study design, investigators use the correlation statistical test to identify and analyze the degree of association (or relationship) between two or more variables or scores (2015).

RESEARCH SETTING

The study was conducted during School Year 2021 – 2022 Southern de Oro Philippines College is located in Licuan, Cagayan de Oro City, Misamis Oriental, on Julio Pacana Street.

Engineer Apolinar Y. Garcia and Attorney Claudio M. Aguilar proposed the school during a meeting of the Board of Directors of the then-17 Bermuda Shopping

Center, now known as Benito-Raymunda Realty Corporation, in August 1981. The goal was to further Don Benito R. Garcia and Dona Raymunda Yabut Garcia's conjugal real properties. The creators want to devote their best efforts to the welfare and benefit of young people through education. The school was formally approved by the incorporators on October 2, 1981, namely: Engr. Brgy. Apolinar Garcia and Mrs. Apolinar Garcia Mrs. Adelina Nacalaban, Captain and Mrs. George Garcia.

Dr. and Mrs. Hernando T. Mejia, Dr. and Mrs. Bernardo Resoso, Atty. Venusto Y. Garcia, Mr. and Mrs. Alfredo Y. Garcia, Dr. and Mrs. Hernando T. Mejia, Atty. Claudio M. Aguilar and Mrs. Aguilar, as well as Don Benito R. Garcia. Southern Philippines Academy, now Southern de Oro Philippines College, was filed with the Securities and Exchange Commission in its Articles of Incorporation on October 19, 1981. Reg.No. 101440. Southern de Oro Philippine College is in Cagayan de Oro, Misamis Oriental, Philippines, at Julio Pacana Street 9000. Kindergarten, Elementary, Junior High School, Bachelor of Science in Accountancy, Bachelor of Science in Information Technology, Bachelor of Elementary Education, Bachelor of Secondary Education, and Certificate of Professional Teaching (PROF) and Caregiving NC II are among the programs offered by Southern de Oro Philippines College.

PARTICIPANTS AND SAMPLING PROCEDURE

The Respondents of the study are the teachers working at Southern De Oro Philippines College, located at Julio Pacana Street, Cagayan De Oro City, Philippines. This includes the 40 instructors of Southern de Oro Philippines College which is composed of different departments, 4 teachers from Information Technology department, 7 teachers from Business Administration Department, 4 teachers from Criminology Department, 16 teachers from Senior High School Department and 19 teachers from Education Department.

The participants of this research are determined through purposive sampling. Purposive sampling, according to Arikunto (2010), is the method of picking a sample by taking a subject that is not based on the level or region, but rather on the specific objective.

RESEARCH INSTRUMENT

The researchers used a checklist questionnaire to gather data, modified from Moralista & Oducado, 2020, UNESCO ICT Competency Framework for Teachers, 2018 and Alvarez, 2020. It is administered a 5 Point likert scale, a method of rating system that measures perceptions directly towards the respondents which allows the respondents to express how they feel the statement.

STATISTICAL TREATMENT

To acquire better understanding of the data the following tools was used:
The mean and standard deviation for problems 1-3. Coefficient of Correlation was employed to determine the significant relationship between perceived level of barrier in implementing flexible learning and perception and ICT competencies of teachers.

RESULTS AND DISCUSSION

Problem 1. What are the perceptions of the teacher-respondents towards flexible learning?

Table 1.

Perceptions of the Teachers towards the Flexible Learning Modality

Statements	Mean	Standard Deviation	Verbal Interpretation
1. Online education is not a viable alternative for learning compared to face-to-face environments	3.13	1.37	Moderately Favorable
2. Students learn less in online education courses.	3.13	1.25	Moderately Favorable
3. Grades will be lower for students in an online education class	2.55	1.20	Less Favorable
4. There is less student-teacher interaction in online learning environments	3.15	1.32	Moderately Favorable
5. There is a high degree of departmentalization among students and teachers in online education.	3.18	1.24	Moderately Favorable
6. There is more academic dishonesty in online courses.	3.68	1.06	Highly Favorable
7. Student discussions in online education courses will seem impersonal and lack feeling compared to face-to-face classes.	3.71	1.29	Highly Favorable
8. The time commitment for developing online education courses is comparable to those in face-to-face classes.	3.89	0.95	Highly Favorable
9. Teaching online will have no impact on my face-to-face courses and instruction.	2.76	1.36	Moderately Favorable
10. My lectures cannot be replaced by technology tools.	2.71	1.33	Moderately Favorable
11. There is no way for teachers to know if students did the reading in an online education class.	2.86	1.23	Moderately Favorable
12. The technology of online education courses is difficult to manage.	2.94	1.25	Moderately Favorable

Continued Table 1

Statements	Mean	Standard Deviation	Verbal Interpretation
13. Good teaching principles will carry over from face-to-face to online education courses.	3.73	1.13	Highly Favorable
14. Online learning will increase student technology literacy.	4.15	1.00	Highly Favorable
Overall Mean	**3.25**	**0.78**	**Moderately Favorable**

Table 1 displays the perceptions of the teacher-respondents towards the flexible learning modality. It can be discerned from the table that the teachers are moderately favorable with the flexible learning modality as revealed by the overall mean of 3.25 and a standard deviation of 0.78. The highest mean rating is obtained by the indicator "Online learning will increase student technology literacy" with a mean rating of 4.15 and a standard deviation of 1.0 interpreted as highly favorable. This is followed by indicators "The time commitment for developing online education courses is comparable to those in face-to-face classes" and "Student discussions in online education courses will seem impersonal and lack feeling compared to face-to-face classes" with mean ratings of 3.89 and 3.71 respectively.

The findings suggest that the faculty firmly believed that flexible learning modality can enhance the students' technology skills. In addition, they also considered that the time preparation of online classes is somewhat like the conventional face-to-face classes. However, they perceived that the discussion and communication in flexible learning modality lacks interest and feelings as compared to face-to-face classes. The finding Teas collaborate with Alghandi (2016) stating that open distance and flexible learning impart educational learning opportunities needed by anyone, anywhere and at any time. It provides more educational opportunities to a larger population in different situation and demands. No wonder, online education has achieved popularity among students of the ages since the technological revolution. In today's educational sector, distance education has become more pertinent in contemporary society; especially online learning, because of its capacity for independent, thereby increasing the need for effective course-management systems and teaching strategies that utilize technology.

On the contrary, the indicators rated low by the faculty are the following "Grades will be lower for students in an online education class", "My lectures cannot be replaced by technology tools", and "Teaching online will have no impact on my face-to-face courses and instruction" with mean ratings of 2.55, 2.71, and 2.76 respectively. The data imply that the faculty come to realize that the performance of the students in online and face-to-face classes have no difference. More so, they are also aware that teaching online is of no difference in face-to-face classes.

Problem 2. What is the level of ICT competencies of the teacher-participants?

Table 2

ICT Competencies of Teachers

Statements	Mean	Standard Deviation	Verbal Interpretation
1. Analyze curriculum standards and identify how ICT can be used pedagogically to support attainment of the standards.	4.28	0.65	Very Highly Competent
2. Make appropriate ICT choices to support specific teaching and learning methodologies.	4.36	0.63	Very Highly Competent
3. Identify the function of hardware components and common productivity software application and be able to use them.	4.18	0.72	Highly Competent
4. Organize the physical environment to ensure technology supports different learning methodologies in an inclusive manner	4.23	0.75	Very Highly Competent
5. Use digital tools flexibly to facilitate collaborative learning, manage students and other learning partners, and administer the learning process.	4.47	0.55	Very Highly Competent
6. Blend varied digital tools and resources to create an integrated digital learning environment to support students' higher order thinking and problem-solving skills.	4.36	0.58	Very Highly Competent
7. Design ICT-supported project-based learning activities and use ICT to facilitate students to create, implement and monitor project plans, and solve complex problems.	4.34	0.58	Very Highly Competent
8.Integrate ICT across subject content, teaching and assessment processes, and grade levels, and create a conducive ICT-enhanced learning environment where students, supported by ICT.	4. 31	0.73	Very Highly Competent
8. Design, modify and implement classroom practices that support institutional and/or national policies.	4.44	0.60	Very Highly Competent

Continued Table 2

Statements	Mean	Standard Deviation	Verbal Interpretation
9. Recognize a wide range of technological tools and some ways of integrating them in educational practice	4.31	0.66	Very Highly Competent
10. Demonstrate the basic tasks and uses of word processors, such as text entry, editing text, formatting text and printing	4.42	0.68	Very Highly Competent
11. Describe and demonstrate the use of common hardware.	4.31	0.66	Very Highly Competent
12. Use various channels and languages associated to ICT to communicate with the educational community.	4.26	0.72	Very Highly Competent
13. Incorporate student-centered and collaborative learning to ensure mastery of multidisciplinary curriculum standards.	4.28	0.69	Very Highly Competent
Overall Mean	**4.32**	**0.50**	**Very Highly Competent**

Table 2 discloses the ICT Competencies of teachers-respondents towards the flexible learning modality. It can be observe from the table that the teacher-respondents are very highly competent when it comes to the ICT competencies as revealed by the overall mean of 4.32 and a standard deviation of 0.50 The highest mean rating is obtained by the indicator "Use digital tools flexibly to facilitate collaborative learning, manage students and other learning partners, and administer the learning process" with a mean rating of 4.47 and a standard deviation of 0.55 interpreted as very highly competent. This is followed by indicators " Design, modify and implement classroom practices that support institutional and/or national policies" and "Demonstrate the basic task and uses of word processors, such as text entry, editing text, formatting text and printing" with mean ratings 4.44 and 4.42 respectively.

The findings suggest that the teacher-respondents can use the digital tools to facilitate collaborative learning and manage the learning process. In addition, they also considered that they can create virtual classroom practices that is fit in flexible learning and be able to provide instruction with digital tools such as application that can compose a text. The findings collaborate with Lalima & Dangwal (2017) stating that in the situation of the virtual classroom, learners can acquire learning materials regardless of time and space. Thus, the literature talks about the fact that teachers and students are mediated with ICT through the concept of mixed education. This suggested that

teachers and students, in flexible learning, are both part of the virtual classroom regardless of geographic separation and face-to-face class meetings.

On the contrary, the indicators rated low by the faculty are the following, Identify the function of hardware components and common productivity software application and be able to use them, and " Organize the physical environment to ensure technology supports different learning methodologies in an inclusive manner" with the mean ratings of 4.18 and 4.21 respectively. The data implies that the respondents think that using ICT skills in developing and presenting information is very essential pedagogical competency that teachers need to require.

Problem 3. To what extent are the barriers encountered by teachers in implementing flexible learning?

Table 3

Barriers in implementing the Flexible Learning

Statements	Mean	Standard Deviation	Verbal Interpretation
1. Inadequate forms of assessment tools.	3.13	0.87	Moderate Barrier
2. Lack of guiding policies for flexible learning implementation.	3.28	0.92	Moderate Barrier
3. System and technical glitches.	3.57	0.82	Serious Barrier
4. Technical difficulty with minimal support.	3.52	0.95	Serious Barrier
5. Inclement weather that compromises the internet connections.	4.07	0.91	Serious Barrier
6. Institutional initiatives to equip the teachers with appropriate and relevant technology skills.	3.71	1.01	Moderate Barrier
7. Lack of proper gadgets for teachers and/or learners	3.76	1.02	Serious Barrier
8. Slow response of internet service providers.	3.78	0.93	Serious Barrier
9. Lack of institutional support.	3.31	1.04	Moderate Barrier
10. Limited to lack of interaction between teacher-student and students-student.	3.21	1.35	Moderate Barrier
11. Limited time in exchanging of information from the student and facilitator.	3.57	0.82	Serious Barrier

Continued Table 3

Statements	Mean	Standard Deviation	Verbal Interpretation
12. Integrity in monitoring and tracking of student's performance.	3.34	0.84	Moderate Barrier
Overall mean	**3.49**	**0.59**	**Serious Barrier**

Table 3 displays the barriers in implementing the flexible learning. It shows from the table that the teachers met serious barriers in implementing flexible learning modality as revealed by the overall mean of 3.49 and a standard deviation of 0.59. The highest mean rating is obtained by the indicator "Inclement weather that compromises the internet connections" with a mean rating of 4.07 and a standard deviation of 0.91 interpreted as serious barrier. This is followed by indicators "slow response of internet service providers" and "Lack of proper gadgets for teachers and/or learners" with mean ratings of 3.78 and 3.76 respectively.

The findings suggest that the faculty firmly believed that in implementing flexible learning there are serious barriers that the students and teachers encountered. Such as inclement weather that can cause of problem in the internet connection. In addition, they considered that one of the barriers that teachers and learners encountered is lack of proper gadgets and unable to obtain internet connection from service provider due to lack of financial support. The findings collaborate with Baticulon et al. (2021) who disclose the major barriers of Filipino medical students to adopt online learning. These barriers can be categorized as technological (lack of devices, issues with the online platform, Internet connectivity), individual (students' learning style, physical and mental health), domestic (concerns at home, financial distress), institutional (school curriculum), and community barriers (lockdown restrictions, infrastructure challenges, and sociopolitical issues.

On the contrary, the indicators rated low by the faculty are the following "Inadequate forms of assessment tools and "Limited to lack of interaction between teacher-student and students-student" with mean ratings of 3.13 and 3.21 respectively. The data imply that the faculty come to realize that the performance of the students in online and face-to-face classes implies that the respondents think that barriers in flexible learning affects in teaching performance

Problem 4. Is there a significant relationship between the barriers and the teachers' perceptions and ICT competencies towards flexible learning modality?

Table 4

Correlation Analysis between Barriers and the Teachers' Perceptions and ICT Competencies

Independent Variables	Correlation Coefficient (r)	Probability	Interpretation	Decision on Ho
Perceptions	0.553**	0.000	Moderate	Reject
ICT Competencies	-0.107	0.521	Negatively Low	Accept

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows the correlation analysis between the barriers and the teachers' perceptions and ICT competencies. It can be observed from the table that the perceptions of the teachers are significantly related to the barriers as evident on the P-value of 0.000 < 0.05 and R-value of 0.553. This entails that the perceptions of the teachers influenced the perceived barriers of flexible learning. Furthermore, the more positive are the perceptions of the teachers the more that they can overcome the gaps and barriers in the implementation of flexible learning. Thus, the null hypothesis is rejected for this reason.

On the other hand, the ICT competencies of teachers has no significant relationship to the perceived barriers as revealed by the P-value of 0.521 > 0.05. Therefore, the null hypothesis is accepted. The finding implies that the ICT competencies of teachers are not statistically related to their perceived barriers and gaps encountered in the implementation of flexible learning.

CONCLUSIONS

In the light of the findings that came out from this study, the researchers have drawn the following conclusions:

The teachers are moderately favorable with the flexible learning modality. They perceived that online learning would increase student technology literacy. Furthermore, they are also conscious that online learning is comparable with the in-person classes.

The faculty members are highly competent in terms of Information Communication Technology. This implies that the teachers have the ability to manipulate online tools for virtual learning.

Unstable internet connections due to inclement weather and the lack of gadgets for learners and teachers are the serious challenges met by the faculty in the implementation of flexible learning amidst the pandemic.

The perceptions of the teachers are statistically related to the barriers they encountered in the implementation of flexible learning. This indicates that a positive behaviour of the teachers towards the flexible learning the lesser are the challenges they may encounter. On the other hand, the ICT competencies of the teachers are not statistically related to the challenges they encountered. This can be attributed to the fact that the teachers are highly competent in using digital tools.

RECOMMENDATIONS

The following recommendations are offered based on the findings and conclusions of this study.

1. In-service training may be conducted to teachers to focus on how to use other features of the Google Classroom to make the instruction more interactive. Likewise, how to use productivity tools to make the teaching-learning process more effective and enjoyable.

2. Other media platforms other than the Google Classroom such as email, face - book, messenger, and blog can be used by the faculty in case there is an intermittent connection due to inclement weather condition.

3. A positive attitude towards flexible learning modality can be strengthened so that lesser challenges may be encountered by the faculty.

4. Future research using other variables and a wider coverage may be conducted to determine if there are similarities with the outcomes of this study.

LITERATURE CITED

Alshwiah, A. (2021). Barriers to Online Learning: Adjusting to the 'New Normal' in the Time of COVID-19. Retrieved from https://eric.ed.gov/?q=barrier+in+flexible+learning&ff1=dtySince_2021&id=EJ1316914. Retrieved on January 29, 2022

Asio, F., Gadia, E., Abarintos, E., Paguio, D., Balce, M. (2021). Internet Connection and Learning Device Availability of College Students: Basis for Institutionalizing Flexible Learning in the New Normal. Retrieved from https://sabapub.com/index.php/she/article/view/224. Retrieved on February 12, 2022

Bringula, R., Reguyal, J., Tan, D., Ulfa, S., (2021). Mathematics self-concept and challenges of learners in an online learning environment during COVID-19 pandemic Smart Learning Environments. Retrieved from https://slejournal.springeropen.com/articles/10.1186/s40561-021-00168-5. Retrieve on January 29, 2022

Dayagbil, F., Palompon, D., Garcia, L., Olvido, M. (2021). Teaching and Learning Continuity Amid and Beyond the Pandemic. Retrieved from

https://www.frontiersin.org/articles/10.3389/feduc.2021.678692/full.
Retrieved on February 12, 2022

Flexible Learning. Retrieved from https://tophat.com/glossary/f/flexible- learning/.
Retrieved on January 29, 2022

Jellis, C., Williamson, Joanna, Suto, Irenka (2021).How Well Do We Understand
Wellbeing? Teachers' Experiences in an Extraordinary Educational Era.
Retrieved from
https://eric.ed.gov/?q=+gaps+in+performing+flexible+learning+2021+for+t
eachers&id=EJ1317616. Retrieved on January 29,2022

Kariippanon, K., Cliff, D., Lancaster, S., Okely, A., Pariish, A. (2019). Flexible learning
spaces facilitate interaction, collaboration and behavioural engagement in
secondary school. Retrieved from
https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0223
607&fbclid=IwAR1Iz4ufpBauq671EVtjxM8AkNT4HTuPa4me1_ocsqNzlAY
DqnGnkTialoo. Retrieved on February 12, 2022

Kokoc, M. (2019). Flexibility in e-Learning: Modelling its Relation to Behavioural
Engagement and Academic Performance. Retrieved from
https://www.researchgate.net/publication/355684957_Flexibility_in_e-
Learning_Modelling_its_Relation_to_Behavioural_Engagement_and_Aca
demic_Performance. Retrieved on February 12, 2022

Kulal, A., Nayak, A. (2020). A study on perception of teachers and students toward
online classes in Dakshina Kannada and Udupi District. Retrieved from
https://www.emerald.com/insight/content/doi/10.1108/AAOUJ-07-2020-
0047/full/html. Retrieved on February 12, 2022

Simmons, A. (2021). Instructional Planning after a Year of Uncertainty. Retrieved from
https://eric.ed.gov/?q=+gaps+in+performing+flexible+learning+2021+for+t
eachers&id=EJ1317193. Retrieved on January 29,2022