

Perceptions of B.Ed students on the course of 'Understanding the Disciplines and Academic Subjects' offered in Teacher Education Programs

Abstract: The primary objective of teacher education programs, such as the Bachelor of Education (B.Ed.), is to cultivate a profound and significant comprehension of various disciplines and academic subjects. A comprehensive understanding of multiple disciplines and school subjects is essential to the educational journey, particularly for students pursuing a Bachelor of Education (B.Ed) degree to become teachers. The course 'Understanding the Disciplines and Academic Subjects' is primarily offered in the B.Ed programme for this purpose. This study investigates students' perceptions regarding this course and the difficulties students face in comprehending sub-topics. Research Questions: What is the perception of B.Ed students regarding the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University? What is the perception of B.Ed students regarding the sub-topics of the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University? Research objectives: To understand B.Ed students' perception of the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University. Population of the Study: All B.Ed. Tamil Nadu Teachers Education University students studying in the Cuddalore district of Tamilnadu during the year 2023 constituted the study population. Thirty colleges are offering B.Ed programmes in the Cuddalore district of Tamilnadu—about three thousand students studying in these colleges. Sample of the Study: The investigators selected five hundred and twenty-three B.Ed. Tamil Nadu Teachers Education University students studying in the Cuddalore district of Tamilnadu during the year 2023 were selected randomly as the study sample. Sampling technique: Cluster Sampling was used for this study. Five of thirty colleges were randomly selected for the investigation. Hypothesis of the Study: Null Hypothesis: There is no significant difference in the perceptions of B.Ed. students' regarding the importance of learning the subject 'Understanding Disciplines and School Subjects'. The output of the study will help educators design pedagogical methods and modify the teaching-learning process to make the course understandable.

Keywords: Disciplines and school subjects, perspectives, professional development and comprehension

1. Introduction

The B.Ed programme is offered for two years. Students study various courses during these two years. One such course is 'Understanding the Disciplines and Academic Subjects'. This course is essential because it helps them understand multiple disciplines' nature. This study analyses the student's perception of this course and the difficulties students face in comprehending various sub-topics of this course.

i. Importance of the course 'Understanding the Disciplines and Academic Subjects' offered in Teacher Education Programs and students perspective

A comprehensive understanding of various disciplines and school subjects is essential to the educational journey, particularly for students pursuing a Bachelor of Education (B.Ed) degree to become teachers. Bachelor of Education (B.Ed) students frequently hold varying perspectives on this subject, shaped by their experiences, educational history, and pedagogical preparation. Here are several prevalent perceptions and views that Bachelor of Education (B.Ed) students may hold regarding the topic of comprehending disciplines and school subjects: Numerous Bachelor of Education (B.Ed) students believe incorporating a multidisciplinary approach into teaching is paramount. They assert that comprehending the interrelationships among various disciplines can enhance student engagement and relevance in learning.

Pedagogy is a significant aspect of teaching school subjects, as highlighted by B.Ed students. They emphasise the importance of employing effective pedagogical strategies in their teaching practices. They may prioritise the significance of using innovative teaching methods and techniques to enhance the accessibility of intricate concepts for students.

The viewpoint expressed by Bachelor of Education (B.Ed) students is that educators should modify their instructional approaches to correspond with the distinct demands of the discipline or subject being taught. Effective learning can be facilitated by various techniques tailored to the subject matter.

The integration of real-life applications is advocated by certain B.Ed students to enhance the curriculum. It is believed that this approach aids students in comprehending the practical significance of their learning.

Addressing Student Interests: Bachelor of Education (B.Ed) students frequently acknowledge the significance of identifying and accommodating students' interests when instructing various subjects. Personalised instruction can potentially enhance students' engagement and motivation significantly.

Promoting Critical Thinking: Bachelor of Education students may argue that developing critical thinking abilities should be a fundamental objective in instructing diverse subjects. Students should be actively encouraged to question, analyse, and evaluate information independently.

Evolving Curriculum: Certain Bachelor of Education (B.Ed) students may articulate the necessity for a curriculum adaptable to societal and technological advancements. They assert that maintaining currency and relevance is imperative in the constantly evolving educational environment.

The course 'Understanding the Disciplines and Academic Subjects' is essential for B.Ed students; therefore, the investigators are interested to know the students' perception of this course. This research can provide valuable insights for teacher education, curriculum development, and the formulation of educational policies.

ii. Research Significance

Preparation and Development: Bachelor of Education programs equip aspiring educators with the necessary skills and knowledge. Gaining insight into individuals' viewpoints regarding the instruction of different courses can contribute to developing teacher training programs. The above point ensures that educators receive comprehensive preparation, encompassing the necessary knowledge and pedagogical abilities to teach various courses proficiently.

Curriculum Design: The input of B.Ed students is valuable in shaping curriculum design at both the pre-service and in-service levels. Understanding the perspectives of these students regarding the course 'Understanding the Disciplines and Academic Subjects' can provide valuable guidance for curriculum developers in designing instructional materials that are more relevant and effective.

Teaching Strategies: The perceptions of B.Ed students can provide valuable insights into the teaching strategies they perceive as most effective for the course 'Understanding the Disciplines and Academic Subjects'. This research has the potential to identify novel and

student-focused methodologies that can be integrated into teaching practices to improve student learning outcomes.

In essence, it is essential to investigate the perspectives of B.Ed students regarding their comprehension of the course 'Understanding the Disciplines and Academic Subjects'.

iii. Review of Related Literature

The Investigators reviewed four studies related to the following topics

- i. Research related to different subjects in B.Ed.
- ii. Research related to 'understanding disciplines and school subjects' in B.Ed.

i. Research related to different subjects in B.Ed.

Fatima, Naaz (2015) B.Ed. geography achievement and subject enrichment through interactive learning are assessed. The goal was to compare B.Ed. trainees' mean content exam scores between experimental and control groups and men and women. The study used a "two-group post-test design. Purposeful sampling. 70 of 130 B.Ed. Geography students were tested. The experimental group was treated to learn and enrich information, while the control group was taught. This study found that interactive learning improved B.Ed. topic knowledge and achievement.

ii. Research related to 'Understanding Disciplines and School Subjects' offered in B.Ed.

Register cartography, and Giovanni Parodi's Registerial profiles of school topics and university specialties were studied by Matthiessen (2021). School and university enrollments are covered. Giovanni Parodi's university discipline registerial profiles and systematic functional school topic profiles complement. These pioneering contributions the comprehensive approach so future study might fill gaps as personal registerial repertoires grow. They compared register and 'genre' approaches to situational language functional variation for conceptual clarity.

Subject Disciplines and the Construction of Teachers' Identities, edited by Thompson (2023). This chapter analyses how topic disciplinary identification changes teachers' identities. The chapter opens with the premise that teachers must teach their well-studied subjects morally and methodically. Teachers must understand subject principles and evidence regardless of speciality. This chapter posits that conceptual understanding of teaching a topic in specific settings influences instructors' sociocultural identities. Beginning English teachers show how

subject disciplines, school subjects, and teacher identities are challenged throughout the chapter.

Hudson et al. (2023) examined 'Trajectories of powerful knowledge and epistemic quality: assessing the transitions from disciplines throughout school subjects'. A comparative topic didactics research paradigm is used to assess academic discipline changes across school topics. The theoretical framework describes classroom-to-society transfer as 'powerful knowledge', 'transformation', and 'epistemic quality'. The approach analyses empirical studies on KOSS network knowledge and quality across school disciplines and teacher education. Footnote 1 After defining *powerful knowledge* as specialized creation and transfer of information, the study studies discipline transitions across school topics. Frontier empirical study data is analysed using broad subject groups. Biglan categorization is used to compare higher education subjects to their equivalents. We conclude with curriculum planning, teacher education policies, and subject-specific educational material comprehension.

iv. Identifying the Research Gap and Rationale of the Study

Investigators examined literature by Matthiessen (2021), Thompson (2023), Hudson, Gericke, Scheller, & Political (2023) related to the topic 'Understanding Disciplines and School Subjects' to understand their unique challenges and requirements. The course 'Understanding Disciplines and School Subjects' is a fundamental course offered at B.Ed level. Although various studies are conducted at the B.Ed level, studies are separate from the course 'Understanding Disciplines and School Subjects' and the perception of B.Ed students for this course. Therefore, it is imperative to study the perceptions of B.Ed students in the issue 'Understanding Disciplines and School Subjects'.

v. Research Problem and Objectives:

Research Problem: Perceptions of B.Ed students on the course of 'Understanding the Disciplines and Academic Subjects' offered in Teacher Education Programs

Research Questions:

- What is the perception of B.Ed students regarding the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University?
- What is the perception of B.Ed students regarding the sub-topics of the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University?

Research objectives:

- To understand B.Ed students' perception of the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University.

vi. Operationalization of Terms

Understanding Disciplines and School Subjects: Curriculum and Pedagogic Studies offered in B.Ed. degree Programme in Tamil Nadu Teachers Education University.

Perceptions: Perception means subjective views, thoughts, and beliefs of B.Ed students regarding the course 'Understanding Disciplines and School Subjects' offered in the Tamil Nadu Teachers Education University.

vii. Methodology

i. Population of the Study

All B.Ed. students of Tamil Nadu Teachers Education University studying in the Cuddalore district of Tamilnadu during the year 2023 constituted the study population. Thirty colleges are offering B.Ed programmes in the Cuddalore district of Tamilnadu—about three thousand students studying in these colleges.

ii. Sample of the Study

The investigators selected five hundred and twenty-three B.Ed. students of Tamil Nadu Teachers Education University studying in the Cuddalore district of Tamilnadu during the year 2023 were selected randomly as the study sample.

iii. Sampling technique

Cluster Sampling was used for this study. Five of thirty colleges were randomly selected for the investigation.

iv. Hypothesis of the Study

Null Hypothesis H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

v. Research Approach

The investigators adopted a quantitative study.

vi. Research Design

The investigators adopted a quantitative type of study and used a descriptive survey method to collect data.

vii. Tools for Data Collection

The structured questionnaire was used to collect data for this study.

viii. Procedure for Data Collection

Investigators created a 'Understanding Disciplines and School Subjects' questionnaire. Validity and reliability were examined on the questionnaire. Three experts evaluate its validity. The questionnaire was changed after a pilot trial. Data was collected using the modified questionnaire.

viii. Data Analysis

The collected data was analysed quantitatively using percentages and chi-square.

Section 1: Demographic Information

34.8% of students were twenty-one years old. 13% of students were twenty-two years old. 17.4% of students were twenty-one years old. 13% of students were twenty-one years old. 4.3% of students were twenty-five years old. 13% of students were twenty-seven years old. 4.3% of students were thirty-three years old. 2% of students were male and 91.3% of students were female.

Data Analysis for objective of the study : To understand B.Ed students' perception of the course 'Understanding Disciplines and School Subjects' offered in the B.Ed programme at Tamil Nadu Teachers Education University.

Section 2: Questions Related to the Course 'Understanding Disciplines and School Subjects '

Question 1: It is important for B.Ed students to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject.

52.2% of the students strongly agreed with the statement, 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject'.

47.8% of the students agreed with the statement 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject'.

0% of the students neither agreed nor disagreed with the statement 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject'.

0% of the students disagreed with the statement 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject'.

0% of the students strongly disagreed with the statement 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject'.

Table 1: Chi-square value to the question 'It is important for B.Ed students to have a solid knowledge of 'Understanding Disciplines and School Subjects'

Row	Category	Observed	Expected
1	Strongly Agree	273	104.6
2	Agree	250	104.6
3	Neither agree	0	104.6
4	disagree	0	104.6
5	Strongly disagree	0	104.6

H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

$\chi^2(4, N=523) = 787.029, p = 0.0001$. The calculated two-tailed P value is below the threshold of 0.0001. According to conventional criteria, the difference can be considered highly statistically significant. Null hypothesis is rejected and alternative hypothesis is accepted.

There is significant difference in the perceptions of B.Ed. students. The maximum number is 273 for the criteria strongly agree. Therefore, most students strongly agreed with the statement, 'B.Ed students need to have a solid knowledge of 'Understanding Disciplines and School Subjects' as a subject.'

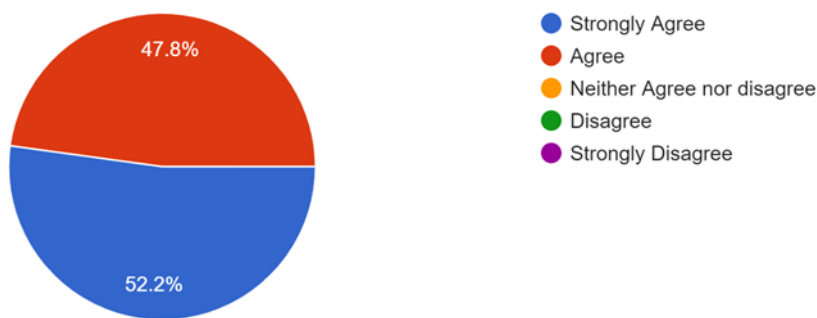


Figure 1: Question 1

Question 2: Which sub-unit of the subject 'Understanding Disciplines and School Subjects' do you find most challenging to comprehend?

Table 1 represents the percentage of answers to the question 'Which sub-unit of the subject 'Understanding Disciplines and School Subjects' do you find most challenging to comprehend?'

Table 2: Percentage of answers to the question 'Which sub-unit of the subject 'Understanding Disciplines and School Subjects' do you find most challenging to comprehend? '

Topic	Very Difficult	Difficult	Neither Difficulty nor Easy	Easy	Very Easy
'Introduction to Disciplines and School Subjects'	0%	21.73%	43.47%	26.08%	8.69%
'Disciplines and Subjects in Sociocultural Perspectives	8.69%	26.08%	39.13%	17.39%	8.69%
'Classification and Teaching Across Disciplines	4.34%	21.73%	39.13%	26.08%	8.69%
'Selection of Content for School Education	4.34%	17.39%	43.47%	17.39%	17.39%
'life-oriented curriculum'	0%	8.70%	52.17%	17.39%	21.74%
'Approaches to Curriculum Designing'	4.34%	21.73%	47.82%	13.04%	13.04%

From table 1 it is clear that for the sub unit 'life-oriented curriculum', the maximum percentage (52.17%) of students replied that it is 'Neither Difficulty nor Easy ' to comprehend.

Table 2 represents the number of students' answers to the question 'Which sub-unit of the subject 'Understanding Disciplines and School Subjects' do you find most challenging to comprehend? '

Table 3: Number of students' answers to the question 'Which sub-unit of the subject 'Understanding Disciplines and School Subjects' do you find most challenging to comprehend? '

Topic	Very Difficult	Difficult	Neither Difficulty nor Easy	Easy	Very Easy
1. 'Introduction to Disciplines and School Subjects'	0	114	227	136	45
2. 'Disciplines and Subjects in Sociocultural Perspectives	45	136	205	91	45
3. 'Classification and Teaching Across Disciplines	23	114	205	136	45
4. 'Selection of Content for School Education'	23	91	227	91	91
5. 'life-oriented curriculum'	0	45	273	91	114

6. 'Approaches to Curriculum Designing'	23	114	250	68	68
Total	114	614	1387	614	409

- i. The chi-square calculation for students' answers to the category 'very difficult' to the subunits is given below.

Table 4: chi-square calculation for students' answers to the category 'very difficult'

Topic	Observed	Expected #	Expected
1	0	19	16.667%
2	45	19	16.667%
3	23	19	16.667%
4	23	19	16.667%
5	0	19	16.667%
6	23	19	16.667%

H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

$\chi^2(5, N=114) = 76.105$, $p = 0.0001$. The calculated two-tailed P value is below the threshold of 0.0001. According to conventional criteria, the difference can be considered highly statistically significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. There is significant difference in the perceptions of B.Ed. students. The maximum number is 45 for the sub-unit Disciplines and Subjects in Sociocultural Perspectives. Therefore, a maximum number of students felt that the unit 'Disciplines and Subjects in Sociocultural Perspectives' is very demanding and challenging to comprehend.

- ii. The chi-square calculation for students' answers to the category 'difficult' to the subunits is given below.

Table 5: chi square calculation for students' answers to the category 'difficult'

Topic	Observed	Expected	Expected
1	114	102.3333	16.667%
2	136	102.3333	16.667%
3	114	102.3333	16.667%
4	91	102.3333	16.667%
5	45	102.3333	16.667%
6	114	102.3333	16.667%

H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

$\chi^2(5, N=614) = 48.443$, $p = 0.0001$. The calculated two-tailed P value is below the threshold of 0.0001. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. There

is significant difference in the perceptions of B.Ed. students According to conventional criteria, the difference can be considered highly statistically significant. The maximum number is 136 for the sub-unit Disciplines and Subjects in Sociocultural Perspectives. Therefore, a maximum number of students felt that the unit 'Disciplines and Subjects in Sociocultural Perspectives' is demanding and challenging to comprehend.

- iii. The chi-square calculation for students' answers to the category 'Neither Difficult nor Easy' to the subunits is given below.

Table 6: chi square calculation for students' answers to the category 'Neither Difficult nor Easy'

Topic	Observed	Expected	Expected
1	227	231.1667	16.667%
2	205	231.166733	16.667%
3	205	231.166733	16.667%
4	227	231.1667	16.667%
5	273	231.166733	16.667%
6	250	231.1667	16.667%

H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

$\chi^2(5, N=1387) = 15.179, p = 0.0096$. The calculated two-tailed P value is below the threshold of 0.0096. According to conventional criteria, this difference is highly statistically significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. There is significant difference in the perceptions of B.Ed. students. The maximum number is 273 for the sub-unit 'life-oriented curriculum'. Therefore, a maximum number of students felt that the unit 'life-oriented curriculum' is Neither Difficult nor Easy to comprehend.

- iv. The chi-square calculation for students' answers to the category 'Easy' to the subunits is given below.

Table 7: chi square calculation for students' answers to the category 'Easy'

Topic	Observed	Expected #	Expected
1	136	102.1667	16.667%
2	91	102.1667	16.667%
3	136	102.1667	16.667%
4	91	102.1667	16.667%
5	91	102.1667	16.667%
6	68	102.1667	16.667%

H_0 : There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.

$\chi^2(5, N=613) = 37.496, p = 0.0001$. The calculated two-tailed P value is below the threshold of 0.0001. According to conventional criteria, the difference can be considered highly statistically significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. **There is significant difference in the perceptions of B.Ed. students.** The maximum number is 136 for two sub-units 'Introduction to Disciplines and School Subjects' and 'Classification and Teaching across Disciplines'. Therefore, a maximum number of students felt that the sub-units 'Introduction to Disciplines and School Subjects' and 'Classification and Teaching across Disciplines' is 'Easy' to comprehend.

v. The chi-square calculation for students' answers to the category 'Very Easy' to the subunits is given below.

Table 8: chi square calculation for students' answers to the category 'Very Easy'

Topic	Observed	Expected #	Expected
1	45	68	16.667%
2	45	68	16.667%
3	45	68	16.667%
4	91	68	16.667%
5	114	68	16.667%
6	68	68	16.667%

H_0 : **There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University.**

$\chi^2(5, N=408) = 62.235, p = 0.0001$. The calculated two-tailed P value is below the threshold of 0.0001. According to conventional criteria, the difference can be considered highly statistically significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. **There is significant difference in the perceptions of B.Ed. students.** The maximum number is 114 for the sub-unit 'life-oriented curriculum'. Therefore, a maximum number of students felt that the sub-'life-oriented curriculum' is 'very Easy' to comprehend.

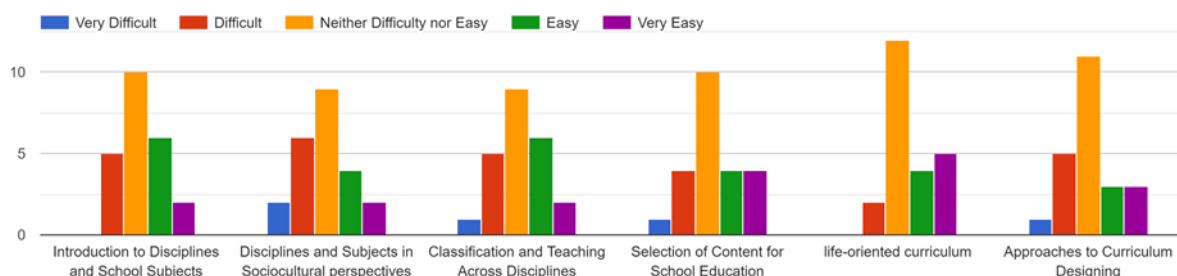


Figure 2: Question 2

ix. Result

Most students strongly agreed that B.Ed students must thoroughly understand the topic 'Understanding Disciplines and School Subjects.' Most students said the 'life-oriented curriculum' subunit is 'Neither Difficult nor Easy' to comprehend. Most students thought the 'Disciplines and Subjects in Sociocultural Perspectives' unit was highly demanding and challenging to understand. Most students thought the 'Discipline and Subject in Sociocultural Perspectives' unit was rigorous and challenging to understand. Most students believed the unit's 'life-oriented curriculum' was neither problematic nor straightforward. Most students said it was 'Easy' to understand the sub-units 'Introduction to Disciplines and School Subjects' and 'Classification and Teaching across Disciplines.' Most pupils said it was 'very Easy' to understand the sub-unit 'life-oriented curriculum'. From the data analysis it is clear that the null hypothesis: **There is no significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered in Tamil Nadu Teachers Education University is rejected in all the statements. Therefore, there was significant difference in the perceptions of B.Ed. students regarding the importance of learning the course 'Understanding Disciplines and School Subjects' offered**

x. Discussion and Conclusion

Many respondents emphasised the significance of educational approaches and a straightforward curriculum design in improving their comprehension of academic subjects. They underlined the importance of having well-organized courses and teaching resources. Support from the Faculty: It became clear that the faculty had a big part in influencing the students' views. Clarity in the curriculum: Many respondents emphasised the significance of educational approaches and a straightforward curriculum design in improving their comprehension of academic subjects. They underlined the importance of having well-organized courses and teaching resources. Support from the Faculty: It became clear that the faculty had a big part in influencing the students' views. For educational institutions and politicians, understanding the perceptions of B.Ed students on the subjects they study is essential. The findings of this study highlight the significance of developing curricula, training staff, and support systems to ensure that students can get the most out of their Teacher Education Programs.

Students need help comprehending the course 'Understanding Disciplines and School Subjects' sub-topics. The studies conducted by Almahasees, Mohsen & Amin (2021),

Encarnacion, Galang & Hallar (2020), Gopal, Singh & Aggarwal (2021), Mamattah (2016) Muthuprasad, Aiswarya Aditya & Jha (2021), Ninsiana, Gabidullina, Widodo, Patra, Pallathadka, Alkhateeb, Gheisari (2022), ReechaJrall, & Kiran. (2022), Srivastava (2023), and Thakkar & Joshi (2017) show the effectiveness of e-learning /online. Research related to the effectiveness of e-learning materials for the course 'Understanding Disciplines and School Subjects 'can be conducted to check how it works for this course. Therefore, for comprehensive understanding, e-learning material should be developed for the course 'Understanding Disciplines and School Subjects'. A study conducted by Fatima & Naaz (2015) shows the effectiveness of participatory learning techniques in teaching and learning. Participatory learning techniques can be used for teaching this course. Different teaching methodologies can be explored and adopted to make the course more manageable.

References

- Almahasees, Z., Mohsen, K., & Amin, M. (2021, May 12). Faculty's and Students' Perceptions of Online Learning During COVID-19. *Sec. Digital Education*, 6. doi: <https://doi.org/10.3389/feduc.2021.638470>
- Anand, M. (2023). An Evaluative Study of the B.Ed. Curricula Operative in Universities with Specific Reference to Environmental Education. *Journal of Teacher Education and Research*, 18(1). doi:<https://doi.org/10.36268/JTER/18103>
- Encarnacion , R., Galang, A., & Hallar, B. (2020, June 30). The Impact and Effectiveness of E-Learning on Teaching. *International Journal of Computing Sciences Research*, 5, 383-397. Retrieved september 28-09-2023, 2023, from <https://stepacademic.net>
- Fatima, K., & Naaz, S. (2015, November). Impact of Participatory Learning Technique on the Content Enrichment Of B.Ed . Trainees. *MIER Journal of Educational Studies Trends and Practices*, 5(2). doi:<https://doi.org/10.52634/mier/2015/v5/i2/1501>
- Gopal, R., Singh, V., & Aggarwal, A. (2021, April 21). Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19. *Education and Information Technologies*, 26(November 2021), 6923–6947. doi:<https://doi.org/10.1007/s10639-021-10523-1>

- Hudson, B., Gericke, N., Scheller, C., & Political, M. (2023, February 26). Trajectories of powerful knowledge and epistemic quality: analysing the transformations from disciplines across school subjects. *Journal of Curriculum Studies*, 119-137. doi:<https://doi.org/10.1080/00220272.2023.2182164>
- Mamattah, R. (2016). *Students' Perceptions of E-Learning*. Linköping: Linköping University, [Department of Behavioural Sciences and Learning. Retrieved September 28, 2023, from <http://www.diva-portal.org/smash/get/diva2:925978/FULLTEXT01.pdf>
- Matthiessen, C. (2021, December). Register cartography and Giovanni Parodi's research: Registerial profiles of school subjects and university disciplines. *Revista signos*, 54(107), 799-841. doi:DOI: 10.4067/S0718-09342021000300799
- Muthuprasad, T., Aiswarya, S., Aditya, K., & Jha, G. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open, Volume 3*(1). doi:<https://doi.org/10.1016/j.ssaho.2020.100101>
- Ninsiana, W., Gabidullina, F., Widodo, M., Patra, I., Pallathadka, H., Alkhateeb, D., . . . Gheisari, A. (2022). High School Students' Attitudes towards E-Learning and Impacts of Online Instruction on Their General English Learning: Challenges and Issues. *Education Research International, vol. 2022*, 10 pages. Retrieved September 30, 2023, from <https://doi.org/10.1155/2022/9103862>
- ReechaJrall, & Kiran. (2022). Development of E-content Module and Measuring Effectiveness in the Topic Understanding ICT and its Application at B.Ed Level. *International Journal of Early Childhood Special Education (INT-JECSE)*, 14(5), 5443-5449. doi:DOI: 10.9756/INTJECSE/V14I5.665
- Srivastava, P. (2023, June). A Study On Attitude of B.Ed. Pupil Teachers Towards E-Learning. *International Journal of Creative Research Thoughts (IJCRT)*, 11(6), h18-h24. Retrieved September 28, 2023, from https://www.researchgate.net/publication/372133106_A_Study_On_Attitude_Of_BED_Pupil_Teachers_Towards_E-Learning
- Thakkar, S., & Joshi, H. (2017, November). Students' Attitude towards E-learning. *International Journal of Advance Engineering and ResearchDevelopment, Volume 4*(Issue 11), 209-213. doi:DOI: 10.21090/IJAERD.15380

Thompson, I. (2023). Subject Disciplines and the Construction of Teachers' Identities. In I. Thompson, *The Palgrave Handbook of Teacher Education Research*. doi:10.1007/978-3-030-59533-3_78-1