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Evaluation of Enrollment Trends in Technological Subjects at Secondary Level in Punjab

Abstract *The major aim of this study was to evaluate the enrollment trends in Technical subjects at secondary level. The study was descriptive in nature and quantitative approach was applied for conducting this study. All the teachers, students and parents of Gujranwala Division in Punjab were the population of the study. Stratified random sampling technique was applied for the selection of sample. Three questionnaires were used in this study for the collection of data. Data were collected through personal visits of sampled schools. Data were analyzed by using percentage, mean and independent sample t-test. It was found that majority of students were enrolled in session 2019-20. Furthermore, majority of the students were enrolled in technical subjects on the demand of their parents and technical subjects have fame among the students. It is recommended that the government may arrange some kind of public awareness seminars at local level.*

Key Words: Evaluation, Enrollment, Enrollment Trends, Technical subjects, Secondary Level

Introduction

Education plays a vital role in all the aspects of human beings. It provides a platform for all kind of persons who wants to do something for the humanity. There are different broad fields of education like science, arts and humanities and technical education. There are a lot of opportunities for all the students who can adopt any field of his/her interest.

In Pakistan, secondary education has broadly 2 years of schooling from grade 9 to 10. The students are supposed to give standardized set of tests under regional boards at the end of tenure of 1 year and same process goes for the grade 10 and after completion of both, they are awarded with degree of matriculation labelled as secondary school education certificate.

Secondary education is considered a crucial stage for the students, their parents and consequently for teachers as well. because, this level provide them a chance to decide their future career thus the importance of secondary level cannot be denied. This level is locally termed a 'matriculation certificate' or 'metric' for short. Secondary level students can specialize in science, humanities, or technical streams. Compulsory subjects for all are English, Urdu, Islamiyat, Pakistan studies and mathematics.

Three main streams of education are there in Pakistan at government sector. These are Science, Humanities and Technical Education. Though, core curriculum is same in all these three streams but optional subjects are different. Half curriculum (four subjects) consists on core curriculum while half is different in all these three streams. Technical stream consists on General science and two technical subjects like woodwork, Painting, Designing and Refrigerator etc.

Science and Technology play significant roles in the world. Therefore, the subjects based on scientific knowledge. are compulsory to compete with the developed countries. The developed countries feel pride as their main objective is to gain scientific and technological knowledge and help nation to progress in social and economic field, on the other hand the developing countries do not pay heed to scientific and technological advancement to keep pace with the modern societies ([Omosewo, 2018](#)). Modern age is the age of technical education. America, Russia, and China are more resourceful

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countries in the field technical education. It produces scientific persons like doctor engineer and mechanics, who are more beneficial for a society. They contribute a lot for the betterment of a society; through higher education we can use our mechanical resources. It is good for economic progress as well scientific study got great value due to its more logical results and orders.

People in Pakistan have less awareness about the benefits of education or they are poor enough to afford education's expenses. It is alarming that almost one third of the students leave school after completing their primary education. When they reach at secondary level, half of them are unable to continue their education due to economic, social or family problems. When they head in secondary education, they have to select different streams like science, humanities and technological subjects. All parents want that their children to become engineers and to get other opportunities. That's why the researcher decided to evaluate the enrollment trends in the technical subjects at secondary level.

Review of Related Literature

Technical Education

[Mitch \(2018\)](#) has attributed human capital as a real meaning for economic growth in 20th century. It has been finished that for the United States connecting 1910 and 1960, 23 percent of the yearly enlargement of manufacture could be accounted for by the educational achievement of work power. On the contrary, the current view of the British manufacturing Revolution has the downplayed payment of human wealth. The necessary rationale for this is the conclusion of British finances and the state of the art in the British economy, such as yarn textiles, and educational levels are in fact deteriorating. This is one of the most significant results of this study. Hence, technical education has to be resolute at school and college levels.

Prior studies have piercing out that schools take a central role in students' direction to science, technology, engineering, and mathematics (STEM). though, the relationship between STEM compass reading and the theory of relationships flanked by schools and STEM direction. In order to ease the understanding and contrast of the result, we conduct a methodical literature review, which hypothetically integrate the variables, abridge the findings, and derive added research submission. In this article, we submit to peer-reviewed journal articles, which have considered the effects of schools on students' STEM direction via quantitative, qualitative, or mixed methods. The study shows that the studies were quite varied regarding examine STEM variable direction, generally optimistic goal with a gaze at the possessions of school. STEM orientation is based on the speculative combination and association of answer (Reinhol et al., 2018).

Importance of Technical Education

[Gujjar and Chaudhry \(2009\)](#) express that the Technical Education couldn't be incremented out at the comparable event, as generally useful instruction. Pakistan is highly suffered by the unemployment of the youth, furthermore, unity and guidance are missing for preparing the labor appropriately, this rupture can be encased by instilling on quality innovative Education in nation. "We have attempted to teach the psyche however messed up to instruct the feeling and the assurance. Overemphasis on information and abilities has prompted the desert of qualities and demeanors. The making of our instructive framework is an educated, learned and experienced proficient who may not be grown-up or mentally consistent, a talented and educated individual, a fiscal wizard who may turn out to be degenerate or hardcore, a capable and capable specialist however not consequently a fair or responsible individual from the workforce" ([Quisumbing, 2013](#)). The present worldwide looked society should be based on values, .. love for mankind, human differentiation, and work as a wellspring of self-realization and lack of concern, money related and social development. Special Education ought to contain values instruction and must fixate on the necessities and achievable of an individual in the general public as well ([Quisumbing, 2013](#)).

Associations, such like UNESCO and UNEVOC with the organization of different establishments, for example, World Bank, International Labor affiliation and Inter-Regional gatherings are operational

to arrive at the most extreme advantages of Technical Education as an income to show signs of improving the lives of the individuals. In the topical days, capabilities and development is meticulous leading to improvement, work bazaar fenced in area and money related development ([Majumdar, 2008](#)). The arrangement of Technical Education has experienced major basic changes. According to [Adiviso, \(2009\)](#) these adjustments have risen up out of obstruction of a variety of countries and remove a portion of global associations. Significant improvement have experienced in the following perspectives: Curricula amendment. Educational programs are being specially crafted and being restored as demand goal-oriented, with specific spotlight on aptitude aggressiveness and utilize capacity of the alumni. a. Measures Setting and Development and other factor being alert is setting of standards to embrace the "adaptation and development of best practice" in the field.

This is the crucial commitment of undertakings which are sponsored by remote benefactor office. Blockage in the improvement of TE in Pakistan: Views and examination 120 social promoting of Technical Education. Profession guideline and social advertising have been worn as apparatus to improve social picture of Technical Education, support social unprejudiced nature and cut deficiency from the general public. Offices, Modernization and Maintenance the improvement is being made for the advancement of its comforts and rigging. Works are being made to challenge the preparation climate with the genuine office. Expanding Access and Gender Development, the major changes are being made to improve the Technical Education for both male and female benefactor.

[Majumdar, \(2010\)](#) has extra contend that in the Asian-Pacific area solely some basic trepidation of governments regarding Technical Education are; to propel employment opportunity for Technical Education graduates, to vanquish staff need, arrangements of readiness at assembling and moving workshops (for staff), illuminate educational plans to meet market requirements to improve industry-foundation association, up degree of Technical Education correspondences, and understudies treatment. As a rule, commitment in either professional or scholastic courses, all through school is operationalized by tracking understudies .by the two divergent training rear entryway. The repayment of such a following framework are not clear, as leave-taking school with professional prerequisite frequently decipher into compressed choices of extra post-obligatory training, essentially of the scholastic kind.

The instigation impact of adapting more practice-situated abilities quality subsequently is lightening by high costs of later catch to scholastic training. Despite the fact that the special alternative of move to scholastic instruction may live, prior following will prompt 4 capably various degrees of abilities and capabilities ([Woessmann, 2008](#)). What's more, with the severance of high-and low-type understudies, VET quality counterbalance the match plausible of word related training ([Shavit and Müller, 2000](#)). realized that solitary barely any young people nearly figure out how to go into scholarly instruction following professional tutoring ([Kogan, 2008](#); [Carrero, 2006](#)), the professional tutoring choice is a lot alleged as an impasse track and subsequent option training in numerous nations, humble gaze by the populace.

Challenges of Technical Education

The reasonable culmination of school-based readiness isn't easy, and we cut down the key test ascending with school-based VET in dissimilar to nations along with these lines, mystery by their locale and institutional similarity with South European Countries. Adolescents in Southern European nations, for example, Spain, Portugal, Italy, and Greece just as France face specific unpredictability when attempting to go into the work showcase, with these old issues incited by the new monetary calamity. Despite having better than expected NEET rates, work showcase affirmation is hard for both low-and high-talented adolescent individuals. One significant issue is the limbless division of the work advertise flanked by suffering and fixed-term understanding, which can be credited to extreme the sack resistance and to a great extent loosen passing assistance.

In this nation, development to an higher position is challenging. Another issue is compensation robustness in low-talented work by aggregate great arrangement. For case, common great purchase in Spain, which is center at the area/business level, sets "entrance littlest sum wage" over the legitimate

littlest amount wage, blow up the lesser piece of the compensation division and resultant in very high check for youthful work force and those least proficient. VET in these nations just assumes a trifling job, and is generally school-based, with just 4 percent of those in word related upper-optional learning in Spain join school-and work-based preparing, in sharp qualification with the 74 percent share in Germany, where twofold VET is most high-flying ([Cedefop, 2010](#)).

The relatively auxiliary job of VET in these realms can be given subtleties by a constrained consideration of administrator in increasingly formal VET (attributable to the double assistance course of action), and furthermore, by solid possibility of up social portability for the benefit of youngsters and their families, in this manner, designed solid favoritism for college preparing. All in all, the attention on fund youth administration in these nations has turn out badly. in overabundance of the previous 30 years, Spain has shortened managers' expenses of utilize youthful workers by means of endowments.

According to the project, 12 sectoral ETP could be recognized so far, largely in the areas of developed, creation and going to places of interest. Further brave to be met in MENA countries comprise inadequate backing and a missing encouragement system on the part of the training institutions, both of which are likely vital determinant of training excellence. While the funding of VET centers mainly happen via public budget portion (based on past staffing), student fees are usually incomplete and only envelop directorial expenses (Egypt, Tunisia, Jordan). The Manforme restructuring in Tunisia opened throughout the 1990s intended at greater than ever, the responsibility of instruction centers from end to end output-based financial support so far was disadvantaged by the high amount of centralization, thus preventive the extent for the independent action of preparation providers. In additional devolution reorganization, the preparation centers were make available with better self-sufficiency and a self-management configuration contained by a unvarying outline, however performance-based endowment is still mislaid ([Masson, Baati & Seyfried, 2010](#)).

Technical Subjects are Considered Masculine

Singular explanation referred to for this was as specialized subjects are estimated manly (therefore „unladylike“), about everybody young ladies are reluctant to try and sparkle at these subjects, as this would sketch concentration to them in manners that would make them feel scratchy. Accomplishment in these subjects limit additionally offend to them from different young ladies and make them the contempt of the young men, who were repeatedly accounted to dampen young ladies from participate absolutely and performing sound in these subjects. In Ghana for delineation it is story that society respect young ladies who performed well in science as witches or as men, ladies ([Bird, 2011](#)).

Guardians are likewise answered to dispirit their children to wed ladies who are science graduates as they felt that they would not appreciate particularly those spouses who were non-researchers. These were recognized as a couple of the frames of mind that demoralize young ladies to contribute and perform admirably in modern subjects ([Peterson & Runyan 2009](#)).

In various region of rustic Tanzania, on realization teenage years (from upper essential), young ladies are unsurprising to contribute in start service went for set them up for adulthood and wedding. These services are frequently detained throughout the school world and result in young ladies missing a substantial quantity of educational time. Commitment in these functions should impact girls' commitment in instruction in widespread and Science Mathematics and Technical subjects in two fastidious manners.

One was that the time depleted at these functions was at the expense of important educational time. At the point when these young ladies ultimately go school year kickoff, educators find it difficult to find an opportunity to give them the person notices important to help them make up for lost time with the others. . As stated earlier, science and arithmetic are various leveled subjects where information depends on the structure of advanced learnt ideas, it turns out to be considerably increasingly dubious to make up for wasting time in these subjects and poor accomplishment is practically unsurprising ([True, and Mintrom, 2001](#)).

A few guardians state that their theory in their girls' instruction will be absent to the young lady's significant other at marriage. In the biased social framework, most parents' fear that their funds wasted on their little girl's training who will move to the spouse through marriage as she will be dependent upon her husband. The lady is equivalent to any profit the man may have, with no individual worth. Her expense and legitimacy is determined by the quantity of pigs she raises and the quantity of youngsters she stand. There is no affirmation for her to go turn around and share the advantages of her educating with her parent ([Khan, 2007](#)).

Subsequently, guardians prohibit their young ladies from going school as their advantage will be broken. Furthermore, guardians do every possible effort to get married their daughters at the age when they need to be educated at school. They can drop out their little girl from school at any time without considering her future and security.

Statement of the Problem

Technical education plays a vital role for the development of skills in any individual. There have been observed that most of the students want to seek admission in science subjects. Technical subjects are also very important in our society. Therefore, the researcher wanted to know the "evaluation of enrollment trends in technological subjects at secondary level in Punjab".

Objectives of the Study

The objectives of this study were:

1. To find out the enrolment trends in technical education at secondary level.
2. To explore the causes of enrolment trends in technical education at secondary level.
3. To compare the enrolment trends of boys and girls in technical education at secondary level.

Research Questions

1. What are the enrolment trends in technical education at secondary level?
2. What are causes of enrolment trends in technical education?
3. What is difference in the enrolment trends of boys & girls toward technical education?

Significance of the Study

As this aimed to evaluate the enrollment trends of Technical subjects at secondary level. So, the finding of the study may be beneficial for the secondary school teachers because they can guide the students about the subject selection in Technical stream. This study is also helpful for students because they can be aware of all the subjects which are being taught in Technical stream and which subjects are beneficial/according to their interest. Furthermore, this study is also beneficial for parents because they can also get awareness about the subjects related to Technical stream.

Delimitation of the Study

The study was delimited to;

1. Gujranwala Division in Punjab
2. Government Secondary Schools
3. Session 2015-16 to 2019-20

Research Methodology

The study was descriptive in nature and quantitative approach was applied for conducting of this research. In quantitative approach the researcher applied questionnaire as a research tool for the collection of data.

Population

All the secondary school teachers, 9th and 10th class students and their parents from Division Gujranwala were the population of the study.

Sample

Stratified random sampling technique was applied for the selection of sample.

Instrumentation

The researcher developed three questionnaires for teachers, students and parents. Five point Likert scale was used for teachers' questionnaire while Yes and No format was applied for students and parents questionnaire.

Validity

The validity of the instruments was checked by three experts from the field of education. The feedback of the experts was included in the final instruments.

Pilot Testing

For pilot testing, the researcher distributed questionnaires among 30 participants. The purpose of pilot testing was to check the readability and usability of the instrument. These participants were not the part of final survey.

Reliability

the reliability of the instruments was measured by using Cronbach's alpha statistical technique. The value of reliability was found

Data Collection and Analysis

Data were collected through personal visits to the sampled schools. Data were analyzed by using percentage, mean and standard deviation.

Results

Table 1. Enrolment Trends in Technological Subjects

Session	Enrollment	%
2015-2016	1912	18.27
2016-2017	1978	18.90
2017-2018	2009	19.19
2018-2019	2071	19.79
2019- 2020	2494	23.83
Total	10464	100

Table 1 indicates the enrollment trend in Technological subjects. The table indicated that the year wise enrollement trends in technological subjects. the highest enrollement were seen in session 2019-2020 which was 23.83%. Graphical presentation of year wise enrollement trends were shown in figure1.

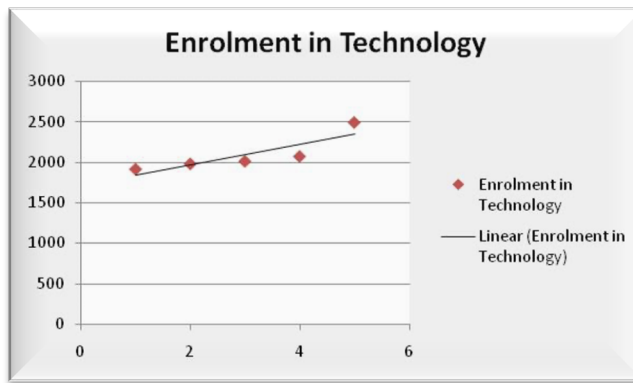


Figure 1: Enrolment Trends in Technological Subjects

Table 2. Enrolment Trends of Boys in Technological Subjects

Session	Enrollment	%
2015-2016	11912	18.27
2016-2017	1978	18.90
2017-2018	12009	19.19
2018-2019	2071	19.79
2019- 2020	2494	23.83
Total	10464	100

Table 2 indicates the enrollment trend in technological subjects. The table indicated the year wise enrolment trends of boys in technological subjects. The highest enrolment were seen in session 2019-20 which was 23.83%. Graphical presentation of year wise enrolment trends were shown in figure 2.

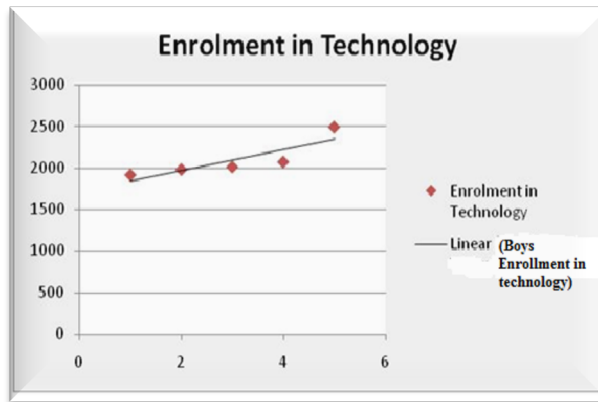


Figure 2 Enrolment Trends of boys in Technological Subjects

Table 3. Enrolment Trends of girls in Technological Subjects

Session	Enrollment	%
2015-2016	0	0
2016-2017	0	0
2017-2018	0	0

2018-2019	0	0
2019- 2020	0	0
Total	0	0

Table 3 indicates the enrollment trend of girls in technological subjects. The table indicated the year wise enrollement trends in technological. the highest enrollement were seen in every session is zero that girls are not enroled in technological subjects which were Graphical presentation of year wise enrollement trends were shown in figure 3.

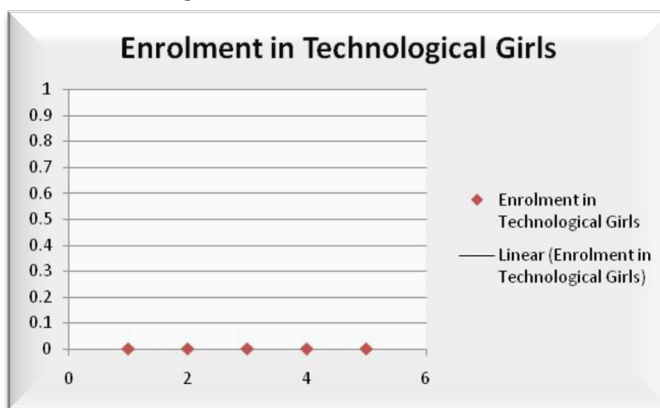


Figure 3. Enrolment trends of Girls in Technological Subjects

Table 4. Causes of Enrollment Trends in Technological Subjects by Teacher

Statements	SA (%)	A (%)	N (%)	D (%)	SD (%)
Technical subjects provide easy access to jobs	49.8	50.2	0	0	0
Boys are only financier of their families so they go for technical subjects	34.1	61.6	0	0	0
Technical subjects are more accepted by poor and middle age families	52.3	47.7	0	0	0
Technical subjects provide quick access to market for jobs.	53.0	42.7	0	0	4.3
Technical subjects provide expertise within Less time than science or humanities.	52.3	47.7	0	0	0
A technical subject opens doors for entrepreneurship	53.0	42.7	0	0	4.2
Technical subjects provide chance to go abroad for earning with high dollar value	43.7	47.7	8.6	0	0
Technical subjects provide technical insights to have more power and control on the market	61.6	34.1	0	0	4.3
Technical subjects provide quick access to market for independent business	43.3	56.3	0	0	0
More motivation is given to become civilized citizens by the teachers	61.6	34.1	0	0	4.3

Parents' profession has impact upon the choice of subjects for their children at secondary level	52.3	47.7	0	0	0
They want to become business person.	56.3	43.7	0	0	0
They want to start their own business	61.6	34.1	0	0	0
They want to expand the business of their fathers	43.7	56.3	0	0	0

Table 4 indicates the percentages of the causes of enrollment trends in technological subjects by teachers. The table reveals that mostly teachers were strongly agreed and agreed regarding causes of enrollment trends in technological subject. The highest percentage 61.6 % and 34.1% showed that mostly teachers were strongly agreed and agreed with the statements "Technical subjects provide technical insights to have more power and control on the market". The highest percentage 61.6 % and 34.1% showed that teachers were strongly agreed and agreed with the statement "Technical subjects provide quick access to market for independent business". Similarly, the highest percentage 61.6 % and 34.1% showed that teachers were strongly agreed and agreed with the statement "They want to start their own business

Table 5. Causes of Enrollment Trends in Technological Subjects by Students

Statements	Yes (%)	No (%)
To become good business person	54.0	43.1
To start a new business.	78.8	21.2
To become engineers.	63.3	36.7
To become software engineer.	54.9	45.1
To get more jobs opportunities.	62.3	37.7
To go abroad for the sake of jobs.	67.2	32.8
To impress their peers.	58.9	41.1
To cater the dreams of their parents.	52.1	47.9
To follow their teachers.	60.7	39.3
Due to fear of poor result of science subjects students opt to technological subjects	59.5	37.5
Financial problems force them to opt technical subjects for the sake of jobs.	58.4	39.1
Psychological factors are cause to choose technological subjects.	56.1	40.8

Table 5 indicates the percentages of causes of enrollment trends in technological subjects by students. The table depicted that majority of students had given the response in "Yes" regarding the causes of enrollment trends in technological subject. The highest percentage 78.8% revealed that majority of students had given the response in "Yes" with the statement "To start a new business".

Table 6. Causes of Enrollment Trends in Technological Subjects by Parents

Statements	Yes (%)	No (%)
To become good business person.,	67.2	32.8
Parents profession has impact upon the choice of subjects for their children at secondary level	65.2	34.8
To become engineers.	75.8	24.2
To become software engineer.	63.2	36.8
To get more jobs opportunities	65.4	34.4
To go abroad for the sake of jobs.	65.7	34.3

It provides practical knowledge which is required in improving the living standard of students.	56.3	38.4
To impress their peers.	67.2	32.8
To cater the dreams of their parents.	65.6	34.4
Follow their teachers' profession of their ideal technological teachers.	58.6	41.4
Due to fear of poor result of science subjects, students opt technological subjects'	57.0	43.0
To start their own business	67.2	32.8
Psychological forces are cause to choose technological subjects.	67.2	32.8

Table 6 indicates the percentages of causes of enrollment trends in technological subjects by parents. The table showed that majority of parents had given the response in "Yes" regarding the causes of enrollment trends in technological subject. The highest percentage 75.8% revealed that majority of parents had given the response in "Yes" with the statement "To become an engineer".

Table 7. Compression of boys and girls in Technological Subjects

Session	Enrolment of boys	Girls
2015-2016	1912	0
2016-2017	1978	0
2017-2018	2009	0
2018-2019	2071	0
2019- 2020	2494	0
Total	10464	0

Table 7 indicates the comparison of boys and girls enrollment in technological subjects. The table indicated that year wise enrolment comparison of boys and girls in technological subjects. Table further indicated that the boys enrolment in all session were better than girls enrolment in technological subjects.

Discussion

The major objective of the current study was to evaluate the enrollment trends of students in technical subjects at secondary level. The first objective of the study was to assess the enrolment trends in technical subjects at secondary level. It was found that majority of students were enrolled in session 2019-2020

The second objective of the study was to explore the causes of enrolment trends in technical subjects at secondary level. It was found that majority of students were enrolled in technical subject to become a engineer, software engineer and have more opportunities' in jobs. And demand of their parents. A study conducted by [Gujjar & Chaudhry, \(2009\)](#) they found that parental involvement is one of the major causes for the selection of subjects.

The third objective was to compare the enrolment trends of boys and girls in technical subjects at secondary level. It was found that boys enrollment in technical subjects were more than girls in all the sessions 2015-16 to 2019-20. [\(Birds,2011\)](#).found that majority of learners in technical education were boys.

Conclusions

1. It is concluded that majority of students are enrolled in session 2019-2020 Moreover, majority of boys are enrolled in session 2-19-20 while, girls are not enrolled in session 2015-2020.
2. It is concluded that majority of students are enrolled in technical subject on the demand of their parents and technical subjects have fame among the students, majority of students are agreed

to enroll in technical subjects because they want to start a new business and majority of parents are agreed that their children become engineer that's why they force their children to enroll in science subjects.

3. It is concluded that boys enrollment in technical subjects are better than girls in all the sessions 2015-16 to 2019-20.

Recommendations

1. It is recommended that the government may arrange some kind of public awareness seminars at local level. The speakers may introduce different innovative aspects of. Technical subjects Furthermore, career counselor may motivate students to choose technical subjects at school level.
2. It is recommended that there may arrange awareness seminar at the end of every session for students at school level. The students himself/herself decide to choose the subjects.
3. It is recommended that there may be awareness programs for girls also. Institutions may introduce different parents awareness programs so that parents know the importance of technical subjects.

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