EFFECT OF DIGITAL STORYTELLING ON EMOTIONAL AND SOCIAL ASPECTS OF STUDENTS

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Project Director

Dr.Ganpatsinh Shanabhai Patel
Assistant Professor
A.G.Teachers College
Navrangpura, Ahmedabad-380009.

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Declaration

Project title: EFFECT OF DIGITAL STORYTELLING ON EMOTIONAL AND SOCIAL ASPECTS OF STUDENTS

ICSSR Minor Research Project

I, **Dr.Ganpatsinh Shanabhai Patel,** Project Director, certify that this project is my own work, based on research and that I have acknowledged all material and sources used in its preparation, whether they be books, articles, reports, lecture notes, and any other kind of document, electronic or personal communication. I also certify that I have not copied in part or whole or otherwise plagiarised the work of other persons.

Project Director

Dr.Ganpatsinh S.Patel

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Dr. G. S. Patel
Principal Investigator
ICSSR Minor Research Project

Executive summary

The educational landscape has undergone significant transformations in recent years, largely driven by technological advancements that continue to reshape traditional pedagogical approaches. Among the innovative methods gaining prominence is digital storytelling, a dynamic technique that harnesses multimedia elements such as text, images, audio, and video to convey narratives and ideas. Recognized for its potential to engage learners and enhance emotional and social aspects of student development, digital storytelling has increasingly found its way into educational settings around the globe. This study seeks to explore the effectiveness of digital storytelling techniques in fostering emotional and social growth among students, aiming to deepen our understanding of its contribution to the holistic development of learners in today's rapidly evolving digital landscape.

Digital storytelling represents a fusion of various media elements, offering a captivating and immersive platform for educational engagement. Its power lies in its ability to captivate audiences, evoke emotions, and convey complex concepts in relatable ways. Rooted in constructivist and experiential learning theories, digital storytelling emphasizes active participation and personal connection to content, thereby promoting creativity, critical thinking, and problem-solving skills. By encouraging students to create their digital stories, educators provide them with a medium through which they can explore, express, and reflect upon their own perspectives and experiences, thereby deepening their understanding of subject matter and enhancing their communication skills.

Emotional development plays a crucial role in cognitive processes, decision-making, and social interactions, with proficient emotion management correlating with improved academic performance and healthier social relationships. Digital storytelling serves as a powerful tool for nurturing emotional development by providing students with opportunities to engage with and express a range of emotions within narratives. Through storytelling, students can explore complex emotional themes, develop empathy for others' experiences, and reflect on their own emotional responses. Additionally, digital storytelling projects often involve collaboration and peer feedback, fostering interpersonal skills such as teamwork, communication, and conflict resolution. By sharing their digital stories and receiving constructive feedback from peers,

students learn to listen actively, communicate effectively, and engage in meaningful dialogue—a vital aspect of social development.

This study seeks to illuminate the significance of emotional and social aspects in student development and their implications for academic success and overall well-being. Emotional intelligence, which encompasses the ability to recognize and manage one's emotions, has been shown to correlate with improved academic performance, mental health, and life satisfaction. Similarly, social skills are essential for building positive relationships, navigating social situations, and thriving in diverse environments. By exploring strategies and tools like digital storytelling that support the development of these competencies, educators can better equip students with the skills they need to succeed in school and beyond.

The research findings presented in this study offer valuable insights into the impact of digital storytelling on emotional and social aspects of student development across diverse school settings. Significant improvements in emotional quotient scores were observed post-intervention, indicating the effectiveness of digital storytelling in fostering emotional growth among students. Furthermore, the analysis of post-test scores revealed nuanced insights into gender and geographical differences, with girls generally scoring slightly higher on emotional aspects, and urban students exhibiting marginally higher scores compared to their rural counterparts. Despite these variations, both genders and geographical groups displayed comparable patterns in score distribution and variability, highlighting the potential of tailored interventions to positively impact emotional development across diverse settings.

The findings of this study underscore the transformative potential of digital storytelling in education, particularly in fostering emotional and social growth among students. By leveraging innovative pedagogical approaches like digital storytelling, educators can create dynamic learning environments that cater to the multifaceted needs of today's learners, paving the way for holistic student development aligned with the evolving demands of the digital era. As we continue to explore and refine the role of digital storytelling in education, we stand to unlock new possibilities for enhancing student engagement, promoting critical thinking, and nurturing the emotional and social competencies essential for success in the 21st century.

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Chapter one: Introduction

1.1 Introduction

In recent years, education has witnessed a significant transformation owing to technological advancements. One of the innovative pedagogical approaches gaining prominence is digital storytelling. Digital storytelling leverages multimedia elements, such as text, images, audio, and video, to convey narratives and ideas. It has been increasingly integrated into educational settings, with educators recognizing its potential to enhance both emotional and social aspects of student development.

This research aims to explore the effectiveness of digital storytelling techniques in fostering emotional and social growth among students. In a rapidly evolving digital landscape, understanding how this tool can contribute to the holistic development of learners is crucial. This introduction will provide an overview of digital storytelling, its relevance in education, and the significance of emotional and social aspects in student development.

1.2 Background of Study

Digital Storytelling in Education

Digital storytelling is a dynamic and versatile educational tool that involves the creation of multimedia narratives to convey information, express ideas, or tell stories. It combines various media elements, such as text, images, audio, and video, to engage learners in a compelling and immersive manner. The power of storytelling lies in its ability to captivate audiences, evoke emotions, and convey complex concepts in a relatable way. When applied to education, digital storytelling can be a transformative pedagogical approach.

Educators have increasingly recognized the potential of digital storytelling to enhance learning experiences. It aligns with constructivist and experiential learning theories, emphasizing active participation and personal connection to the content. By encouraging students to create their own digital stories, educators promote creativity, critical thinking, and problem-solving skills. Furthermore, it offers a platform for students to express their unique perspectives and voices.

Emotional Development in Students

Emotional development is a critical component of a student's overall growth. Emotions play a significant role in shaping cognitive processes, decision-making, and social interactions. Students who are emotionally aware and capable of managing

their emotions tend to perform better academically and have healthier social relationships. However, emotional development is a complex process influenced by various factors, including family, peers, and educational experiences.

Digital storytelling can serve as a valuable tool for promoting emotional development in students. Through the creation and exploration of narratives, students can develop empathy by stepping into the shoes of characters and experiencing different emotions. Additionally, digital storytelling can provide a safe and expressive outlet for students to process their own emotions and experiences. By sharing personal stories or interpreting existing ones, students can reflect on their feelings and develop a deeper understanding of themselves and others.

Social Development in Students

Social development is another crucial aspect of student growth. It encompasses the development of interpersonal skills, communication, and the ability to collaborate effectively with peers. Successful social development contributes to a student's ability to navigate social situations, form positive relationships, and work collaboratively in various contexts.

Digital storytelling can be a catalyst for social development by fostering collaboration and communication among students. Group projects involving digital storytelling require students to work together, share ideas, and make collective decisions. These collaborative efforts can improve teamwork, conflict resolution, and negotiation skills. Moreover, sharing digital stories with peers and receiving feedback promotes effective communication and active listening.

Significance of emotional and social aspects in student development

Emotional and social aspects of student development are intricately connected to academic success and overall well-being. Emotional intelligence, which includes the ability to recognize and manage one's own emotions and the emotions of others, has been linked to improved academic performance, mental health, and life satisfaction. Social skills, on the other hand, are vital for building positive relationships, resolving conflicts, and thriving in diverse social settings.

Educational institutions have a responsibility not only to impart knowledge but also to nurture the emotional and social growth of students. Emotional and social competencies are essential life skills that extend beyond the classroom, shaping future

personal and professional success. Therefore, it is imperative to explore effective strategies and tools that can support the development of these competencies.

1.3 Statement of the problem

Statement of the research problem is mentioned below.

EFFECT OF DIGITAL STORYTELLING ON EMOTIONAL AND SOCIAL ASPECTS OF STUDENTS

1.4 Research objectives

The researcher will frame the following research objectives.

- To create a digital story for the social science subject of upper primary school.
- To study the impact of digital storytelling technique on the emotional aspects of school students.
- To study the impact of digital storytelling technique on the social aspects of school students.
- To study the impact of digital storytelling technique on the emotional aspects of school students context to their gender.
- To study the impact of digital storytelling technique on the social aspects of school students context to their gender.
- To study the impact of digital storytelling technique on the emotional aspects of school students context to their school area.
- To study the impact of digital storytelling technique on the social aspects of school students context to their school area.

1.5 Hypothesis

The researcher will frame the following hypothesis for the research work.

HO_1 There will be no significant difference between the average score of Emotional Aspects test of students of control and experimental group.

HO_2 There will be no significant difference between the average score of Social Aspects test of students of control and experimental group.

HO_3 There will be no significant difference between the average score of Emotional Aspects test of boys and girls of experimental group.

HO_4 There will be no significant difference between the average score of Social Aspects test of boys and girls of experimental group.

HO_5 There will be no significant difference between the average score of Emotional Aspects test of urban and rural area students of experimental group.

HO_6 There will be no significant difference between the average score of Social Aspects test of urban and rural area students of experimental group.

1.6 Area of the research

The area of research for this study spans across three key domains within educational research: Educational Technology, Educational Evaluation, and Educational Psychology.

Educational Technology: This field focuses on the integration of technology into educational settings to enhance teaching and learning experiences. In this study, digital storytelling serves as the focal point, representing an innovative educational technology aimed at fostering emotional and social development among students.

Educational Evaluation: Educational evaluation involves the systematic assessment of educational programs, interventions, and practices to determine their effectiveness and impact. The research design employed in this study, including pre-test and post-test measures, represents an evaluative approach to assess the outcomes of digital storytelling interventions on students' emotional and social aspects.

Educational Psychology: Educational psychology explores the psychological processes underlying learning and development within educational contexts. In this study, the focus is on understanding how digital storytelling influences students' emotional and social development, drawing on theories and principles from educational psychology to interpret the findings and implications.

By spanning these interdisciplinary research areas, the study aims to provide comprehensive insights into the role of digital storytelling in promoting holistic student growth and development within the educational landscape.

1.7 Limitation of the research

The primary limitation of this research study is its focus on Gujarati medium Upper Primary School students exclusively. While this narrow focus allows for a more concentrated examination of the impact of digital storytelling on emotional and social aspects, it also restricts the generalizability of the findings to a broader population. Additionally, the use of digital stories and situational tests as tools to measure

emotional and social aspects may introduce inherent limitations. These tools, while valuable for assessing certain dimensions of student development, may not capture the full spectrum of emotional and social experiences. As such, the findings of this study should be interpreted within the context of these limitations, and future research should aim to address these constraints by exploring diverse populations and employing a wider array of assessment methods.

1.8 Definitions of keywords

Digital story

Theoretical definition

Digital storytelling is a short form of digital media production that allows everyday people to create and share their stories online. (Wikipedia).

"Digital storytelling combines the best of two worlds: the "new world" of digitized video, photography and art, and the "old world" of telling stories." (Dana Atchley, 1993).

Digital storytelling has been used in health and teacher education for developing students' professional identity, and as a tool for self-reflection whereby students make and share digital stories about their practice experiences. As a practice it helps to foster higher-order thinking skills, develops digital literacy, and is, "the aggregating element capable of turning our students into true 21st century learners" (Ribeiro, 2012).

Operational definition

In present study researcher is created digital story for the social science subject. Content of digital storied is directly related to the emotional and social aspects of students.

Social and emotional aspects

Theoretical definition

Social and emotional development means how children start to understand who they are, what they are feeling and what to expect when interacting with others. It is the development of being able to: Form and sustain positive relationships. Experience, manage and express emotions.

Social and emotional learning (SEL) is a strengths-based, developmental process that begins at birth and evolves across the lifespan (Weissberg et al., 2015). It is the

process through which children, adolescents, and adults learn skills to support healthy development and relationships.

Operational definition

In present study research has developed two situational test to study the emotional and social aspects of the school students. The score of these tests is considered as emotional and social aspects of the students.

1.9 Layout the research report

Chapter 1 provide a background and context for the study, highlighting the significance of the research within the broader educational landscape. This chapter outlines the objectives of the study and presents the research hypothesis while acknowledging any limitations that may impact the scope or generalizability of the findings.

In chapter 2, the importance of reviewing related literature is emphasized, underscoring its role in informing the current study. A summary of previous studies relevant to the research topic is provided, along with an analysis of their findings. The chapter also highlights the unique contributions of the present study within the context of existing literature.

Chapter 3 discuss **t**he framework of the research, and its design are detailed in this chapter, starting with an exploration of the origin of the problem under investigation. The population and sample of the study are described, along with the methodology employed, including the tools used for data collection and the process of data collection itself. Additionally, methods of data analysis and any notable experiences encountered during the data collection process are discussed.

In chapter 4, the collected data is analysed using both descriptive and inferential statistics. Descriptive statistics provide an overview of the data, while inferential statistics are used to draw conclusions and make predictions based on the sample data. The findings are then interpreted in the context of the research objectives, providing insights into the implications of the results.

The final chapter summarizes the key findings of the study and discusses their implications for educational practice. Educational implications are explored, highlighting potential applications of the research findings in real-world settings. Additionally, suggestions for future studies are provided, identifying areas for further research and potential avenues for expanding upon the current study.

Chapter two: Review of related literature

Chapter two: Review of related literature

2.1 Introduction

Chapter 2 of this research report explores the existing body of literature related to the study's focal areas. This chapter aims to synthesize and analyze prior research in the field, offering insights into the historical evolution, theoretical underpinnings, and practical applications of digital storytelling in educational contexts. By investigating into both international and Indian perspectives, this literature review explains the multifaceted nature of digital storytelling, its pedagogical significance, and its potential impact on diverse aspects of teaching and learning. Moreover, this chapter identifies key gaps and areas for further exploration, laying the groundwork for the analysis and interpretation of data in the following chapters.

2.2 Theoretical Framework of the Research

2.2.1 Storytelling:

Storytelling is the art of conveying a narrative or a series of events to an audience, often with the goal of engaging, entertaining, or informing. It involves using words, images, or other mediums to create a compelling and coherent story. Storytelling can take many forms, including oral traditions, written literature, theatre, film and digital media.

History of storytelling:

1 **Oral tradition:** Storytelling likely began with oral traditions, where stories were passed down from generation to generation through spoken word. These stories often served as a way to preserve cultural and historical knowledge.

2 **Ancient literature**: As civilizations developed writing systems, stories were recorded in written form. Ancient texts like the Epic of Gilgamesh, the Bible, and the Mahabharata are examples of early written narratives

3 **Mythology and folklore**: Many cultures developed rich mythologies and folklore that were used to explain the world's mysteries, teach moral lessons, and entertain. Greek mythology, Indian epics like the Ramayana and Mahabharata, and Aesop's fables are examples.

4 **Medieval literature**: During the Middle Ages, storytelling flourished in the form of epic poems, chivalric romances, and allegorical tales. Works like "Beowulf" and "The Canterbury Tales" are notable examples.

5 **Renaissance and enlightenment**: The Renaissance brought about a resurgence of interest in classical storytelling, while the Enlightenment era introduced more rational and philosophical narratives.

6 **Modern storytelling**: The invention of the printing press in the 15th century made literature more accessible to a wider audience. In the 19th and 20th centuries, the novel and short story became dominant forms of storytelling, and storytelling also expanded to new mediums like film and television.

7 **Digital storytelling**: With the advent of the internet and digital technology, storytelling evolved once again. Interactive storytelling, video games, and online narratives are examples of how storytelling has adapted to the digital age.

2.2.2 Digital storytelling

The concept of digital story in general, revolves around the idea of combining the art of telling stories with a variety of digital multimedia, such as images, audio, and video. Just about all digital stories bring together some mixture of digital graphics, text, recorded audio narration, video and music to present information on a specific topic. As is the case with traditional storytelling, digital stories revolve around a chosen theme and often contain a particular viewpoint. The stories are typically just a few minutes long and have a variety of uses, including the telling of personal tales, the recounting of historical events, or as a means to inform or instruct on a particular topic.

Digital storytelling combines the art of telling stories with a mixture of digital media, including text, pictures, recorded audio narration, music and video. These multimedia elements are blended together using computer software, to tell a story that usually revolves around a specific theme or topic and often contains a particular point of view. Most digital stories are relatively, short with a length of between 2 and 10 minutes and are saved in a digital format that can be viewed on a computer or other digital devices.

Digital storytelling has steadily grown in popularity and is currently being practiced in a myriad of locations, including schools, libraries, community centres, museums, medical and nursing schools, businesses and more. In educational sectors, teachers and students from kindergarten to graduate schools are creating digital stories on every topic imaginable, from art to zoology to history and numerous content areas in between. Digital storytelling has also become a worldwide phenomenon, with

practitioners from across the globe, creating digital stories to integrate technology into the classroom, to support language learning, facilitate discussion, increase social presence and more.

2.2.3 Types of Digital Storytelling:

There are many different types of digital stories, but these stories can be classified majorly into the following three categories:

1. **Personal narratives**

   One of the most popular reasons for producing digital stories is to create a personal narrative. This type of story has multiple benefits in an educational setting. Firstly, the students who view the story learn about people from diverse backgrounds other than their own and they can gain an appreciation of the types of hardships faced by fellow classmates whose families have come from another social background. Personal narratives can be used to facilitate discussions about current issues such as races, multiculturalism and the globalization that is taking place in today's world. In addition, a student who creates such a story can benefit from sharing that story with others and thereby use information as a way of eliminating some of the distance and differences that foreign born students feel between themselves and their peers. A personal narrative can also be a positive means for dealing with emotional and social issues of different families.

2. **Historical documentaries**

   Although many personal narratives can include historical information to add context to the story, a different kind of digital story can be created from historical moments and events that students might explore in a classroom. This helps in providing the historical values of the nation to the students in an expressive and interesting way.

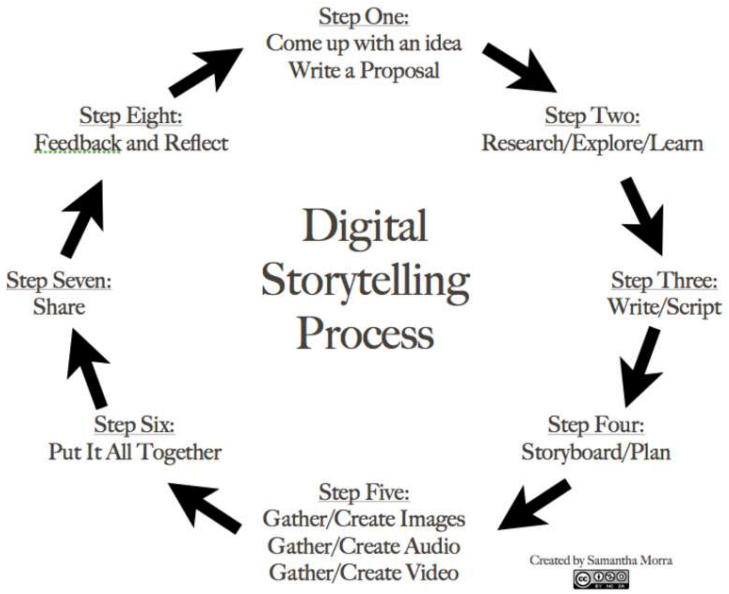
3. **Informative and instructive stories**

   It can be argued that all digital stories inform and instruct. The distinction here is that there is room to create a separate category for stories that reflect instructional material in content areas such as math, science, health education and instructional technology as well as social aspects like morals, values, discipline and behavioural aspects of a student.

2.2.4 Process of digital storytelling

Good digital stories have personal touch; begin with a script / story; are concise; prepared with readily available sources and materials; includes universal story elements and involves collaboration at a variety of levels.

Such stories can be created with the help of following a channelized process. The process of creating digital story can be briefed as follows:



(Source https://edtechteacher.org/8-steps-to-great-digital-storytelling-from-samantha-on-edudemic/)

1. **Start with an idea**

   All stories begin with an idea, and digital stories are no different. This idea could be the topic of a lesson, a chapter heading in a textbook, a question to be asked in class or any topic related to life. Digital stories can be fiction or non-fiction. Once an idea is generated, make it concrete: write a proposal; craft a paragraph, draw a mind-map, or any other pre-writing tool can be used.

2. **Research / explore / learn**

   Whether writing a fiction or nonfiction digital story, one need to conduct research, explore or learn about the topic in order to create a base of information on which the story will be built. During this process, one needs to learn about validating information and information bias as it requires thorough examination about the topic. Organisation of information is very important at this stage.

3. **Write / script**

   It is strongly recommended to initiate the writing with an introduction by editing the idea or proposal. On the basis of the research conducted, bits and pieces of the content for the story are required to be arranged in a logical order. The thorough exploration of the topic will result into a impactful script.

4. **Storyboard / plan**

   Good stories start with a good script, but they don't end there. This is where transition into visual media transcends. Storyboarding is the first step towards understanding sound and images. It is the plan or blueprint that will guide decision making about images, video and sound to be used in the story. Simple storyboards will just have room for images/video and the script. More advanced ones might even include transitions, animations and background music into the plot.

5. **Gather and create**

   This is the stage that makes magic happen, where writing comes to life. Using the storyboard as a guide, one has to gather – or create with the help of images, audio and video. Whatever is selected, will create a great impact and set the tone for the digital story. Introducing the concept with visual hierarchy, tone and illustration becomes mandatory. This also points the external factors like Copyright, Fair Use and Creative Commons regarding the visuals and audios used.

6. **Put it all together**

   This is the stage of revisiting and revising. Here, the blending of images, videos and audios is conducted with the help of transitions and animations. Also, by revisiting the work, one can find the need for story to be created.

7. **Share**

   Once the story is created, now it is show time. With the help of different media platforms the story needs to be shared and viewed by the targeted audience. It is the stage which provides motivation to the creator to create and share more.

8. **Reflection and feedback**

   The last stage is to gather the feedback on the story created. Whether it fulfils its initial goal or not, needs to be checked. It becomes inevitable to reflect upon the work created by the creator for the scope of improvement. Reflection also leads to generation of new ideas.

2.2.5 Factors influencing digital storytelling

There are many influential factors that have both positive as well as negative impact on the creation and execution of digital storytelling. These factors can be briefed as follows:

1. **Technology and platforms**

   The choice of technology and platforms can significantly impact digital storytelling. Different platforms may have different capabilities, and the technology used, such as virtual reality, augmented reality, or social media, can shape the format and distribution of digital stories.

2. **Audience**

   Understanding the targeted audience is crucial. The preferences, interests, and digital literacy of the audience can influence the style and content of digital story.

3. **Content and narrative**

   The story's content, structure and narrative style are fundamental factors. Engaging storytelling techniques, a clear message and a compelling plot are essential for a successful digital story.

4. **Multimedia elements**

   Incorporating various multimedia elements like images, videos, audio and interactive features can enhance the storytelling experience. The choice of these elements can impact the overall effectiveness of the story.

5. **Cultural and societal context**

   Cultural and societal factors can affect the reception of digital stories. Stories should be culturally sensitive and relevant to resonate with the target audience.

6. **Accessibility**

   Ensuring that digital stories are accessible to individuals with disabilities is important. Factors like screen readers, subtitles, and alternative text for images can make digital stories inclusive.

7. **Legal and ethical considerations**

   Copyright, privacy and ethical considerations must be taken into account when creating and sharing digital stories. Respect for intellectual property and the rights of individuals are vital.

8. **Purpose and goals**

   The purpose of the digital story, whether it's for education, entertainment, advocacy or marketing, can influence the way it is crafted and presented.

9. **Budget and resources**

   The availability of financial resources and production capabilities can affect the quality and scope of digital storytelling projects.

10. **Feedback and iteration**

    Continuous feedback and the ability to make improvements based on audience response can shape the success of digital storytelling efforts.

11. **Trends and innovation**

    Staying current with evolving digital technologies and storytelling trends is important to remain relevant and engaging in the digital storytelling landscape.

2.3 Review of related literature

International

Robin B. (2006) presented an article about overview of Digital Storytelling and describes where it came from, how it can be used to support instruction and how students who learn to create their own digital stories improve multiple literacy skills. In addition, information was presented about the tools that can be used to support the educational use of Digital Storytelling. The article also included a discussion of challenges and other important considerations that students and educators should be aware of before implementing the use of Digital Storytelling in the classroom, and concluded with an overview of the research that has been and needs to be conducted on the effectiveness of Digital Storytelling as a teaching and learning tool.

Smeda et al. (2014) presented a research project aiming to create a constructivist learning environment with digital storytelling. The research investigated the pedagogical aspects of digital storytelling and the impact of digital storytelling on student learning when teachers and students use digital stories. A multi-site case study was conducted in one Australian school at primary and secondary levels. In selected classrooms, students and teachers had the opportunity to engage in innovative learning experiences based on digital storytelling. In order to enhance the reliability and validity of the research, multiple methods of data collection and analysis were used. The findings from this study suggested that digital storytelling is a powerful tool

to integrate instructional messages with learning activities to create more engaging and exciting learning environments. It is a meaningful approach for creating a constructivist learning environment based on novel principles of teaching and learning. Thus, this approach has the potential to enhance student engagement and provide better educational outcomes for learners.

Nadia De Vecchi et al. (2016) presented article which were categorized across four broad areas: educational interventions, learning skills, learning about other people's lived experience, and learning about personal lived experience. They identified that while digital storytelling has potential as a participatory process to promote mutual understanding of and empathy towards lived experiences in mental health, there is a dearth of research in this area. More research is needed on the use of digital storytelling in mental health to determine its effectiveness in progressing a recovery orientation in service provision that is built on solidarity and a social justice agenda.

Robin B. (2016) presented an overview of how digital storytelling had and continued to be used to support teaching and learning activities. In addition, recommendations and guidelines were presented for educators who would like to teach students to use digital storytelling as an educational endeavour.

Adele de Jager et al. (2017) in their paper presented thematic analysis of results which indicated that digital storytelling in research was especially appropriate for use with marginalised groups, and was most commonly used in this context. There was some variation in the extent to which digital storytelling in research adhered to the principles with which it was originally developed. Surprisingly, although digital storytelling provides a ready-made knowledge translation product, few research projects employed the digital stories generated to this end. Across research projects, participants reported several benefits of digital storytelling. While some disadvantages were noted, overall, these were outweighed by the benefits of using a respectful, participatory research practice.

Tajeri M. (2017) conducted a study with an objective to explore learners' reflection on potentials for learning when digital storytelling is used as a learning activity in higher education. The study was conducted in a group of 20 students, selected randomly as subjects on a voluntary basis. The data was collected from questionnaires, semi-structured interviews and reflection logs and observations and were analyzed thematically. Three overall themes were established, all with reference

to the main research question outlined for the study. The majority of the findings in the study were as expected, it means when digital storytelling in itself is the goal of a learning activity, the framing of the activity and the contextualization taking part prior to producing the digital stories is important for the student.

Erickson E. (2018) conducted an action research project to test the effects of storytelling on the emotional development of three to six-year-old children in a Montessori primary (PreK-K) environment. The setting was a rural school, and this study took place in an environment with 28 children who were predominantly Caucasian and came from upper-middle-class families. Storytelling took place each day and stories centred on emotions like anger, sadness, and frustration. The adult would share a story first and then invite the children to share stories. After, there would be a small group discussion about the way the particular emotion might feel or look. The results concluded that storytelling did help children with their emotional development by giving them the language they would need to be able to express themselves. The action plan implications conclude that the study could be conducted using different methods of discussing emotions

Robin B. & Sara G. (2019) provided an overview of digital storytelling, the practice of using computer-based tools to create short stories that can be shared online. A brief history of digital storytelling and some of the key concepts and practices of this technology method were described. One of the most common uses of digital storytelling is in education, because of its ability to serve as a powerful tool both for educators and for students. Benefits of digital storytelling for students include the acquisition of 21st-century literacy skills, which have been cited as a critical need for learning, working, and advancing in today's technology-intensive world. A multistep process for creating digital stories was presented along with information about hardware and software that is needed for digital storytelling.

Indian

Vinayakumar R. et. al. (2018) presented a paper which concluded that digital storytelling is recognized as a motivating instructional approach that engages learners in 21st century learning skills which will be essential to success in the future. Digital storytelling is one of the latest pedagogical approaches that can engage learners in computational thinking. Educators are in search of recent technologies and education

approaches to engage students in computational thinking. Digital storytelling using MIT Scratch have the potential to meet this demand.

Kubravi S., Shah S. & Jan K. (2018) stated in their paper that the impact of new technologies in educational contexts has been mostly positive as new technologies have given the educators the opportunity to enhance their knowledge, skills and therefore enhance the standard of education. It has been found that student engagement, achievement and motivation are enhanced through integration of such technologies. It has become increasingly important to use innovative pedagogical models to engage learners. In an effort to blend technology with education digital storytelling is a way to generate interest, attention and motivation for the "digital generation" in today's classroom. Digital Storytelling is one of the innovative pedagogical approaches that can engage students in deep and meaningful learning.

Shaikh A. (2018) presented a study which determined how story-telling can affect the emotional quotient of the growing children belonging to age group of 13 to 15 years old. During the study, a set of students were given a questionnaire to evaluate the aspects of their Emotional Intelligence. The factors such as Self- Awareness, Self-Management, Social- Awareness and Social- Skills were explored. This questionnaire was given before and after the session as a pre and post-test. Difference between the score in pre and post- test indicated whether story-telling improved the emotional quotient of the adolescents. During the session, the students were narrated different stories for 15 days. Every story was based on different morals and different aspects of life. This helped the students to explore and think from different point of views and roles. Apart from emotional intelligence, this study also helped to understand how much one knows about him/ herself. It also helped to identify the areas of relative strengths and areas with the potential for development. It helped in developing the thinking of the young and growing minds.

Ramdey K. & Bokhari H. (2022) presented a paper making an attempt to contextualize e-learning and digital storytelling to foster development supported via ICTs. The paper discussed a case of not-for-profit fund "Going to School" in India that employed ICT tools and design thinking to create visual stories to teach entrepreneurship to children. The paper argued that innovative pedagogy, multichannel ICTs and partnerships with different government and corporate

organizations hold a strong potential to make education accessible to the wider audience.

2.4 Research gap

The existing literature on digital storytelling in educational settings provides valuable insights into its potential benefits and applications. Studies such as those by Robin B. (2006), Smeda et al. (2014), and Nadia De Vecchi et al. (2016) highlight the positive impact of digital storytelling on student engagement, learning outcomes, and empathy development. However, despite the extensive research conducted internationally, there remains a notable gap in the literature regarding the specific effects of digital storytelling on emotional aspects, particularly in diverse cultural and demographic contexts.

While studies like Erickson's (2018) action research project provide evidence of storytelling's positive influence on emotional development among young children, there is a lack of comprehensive research examining the nuanced effects of digital storytelling on emotional intelligence across different age groups and educational settings. Furthermore, the review of literature reveals a scarcity of research exploring the intersection of digital storytelling and emotional intelligence in Indian educational contexts.

Additionally, while some studies, such as those by Robin B. & Sara G. (2019) and Vinayakumar R. et al. (2018), underscore the importance of digital storytelling in fostering 21st-century literacy skills and computational thinking, there is a need for more empirical research assessing its effectiveness in enhancing emotional skills, particularly in Indian schools.

Moreover, the majority of existing research focuses on the overall impact of digital storytelling on learning outcomes, with limited attention given to specific demographic factors such as gender and geographical location. Future research should aim to address these gaps by conducting longitudinal studies that explore the long-term effects of digital storytelling interventions on emotional development across diverse student populations. Additionally, comparative studies examining the differential effects of digital storytelling on emotional aspects among various demographic groups could provide valuable insights into the factors influencing its effectiveness in educational contexts.

2.5 Chapter summary

Chapter 2 explored the review of related literature. The section on the theoretical framework of the research explores storytelling, tracing its historical evolution from oral traditions to digital mediums. Furthermore, it delineates the process and types of digital storytelling, highlighting its educational applications and pedagogical implications. The chapter then proceeds to present an extensive review of related literature, encompassing international and Indian perspectives. International studies, such as those by Robin B. (2006), Smeda et al. (2014), and Nadia De Vecchi et al. (2016), underscore the efficacy of digital storytelling in enhancing student engagement, learning outcomes, and empathy development. Meanwhile, Indian research, exemplified by works like Vinayakumar R. et al. (2018) and Kubravi S., Shah S. & Jan K. (2018), emphasizes its role in promoting computational thinking and deep learning. Despite the wealth of existing literature, the chapter identifies a research gap concerning the intersection of digital storytelling and emotional intelligence, particularly in diverse cultural and demographic contexts.

Chapter Three: Research design

Chapter three: Research design

3.1 Introduction

A research design is the specification of methods and procedure of acquiring the information needed. It is overall operational pattern of the project that stipulates what information is to be collected from which sources by what procedures. It is a strategy or blueprint specifying which approach will be and for gathering and analyzing the data.

Research design is a catalogue of the various phases and facts relating to the formulation of a research effort, it is the arrangement of conditions for collection and analysis of a research effort. It is the arrangement of conditions for collection and analysis of data in a manner that aim to combine relevance to the research purpose with economy in procedure.

3.2 Origin of the problem

Researcher teaches social science teaching methodology in teacher education college. Researcher has created ICT materials for the teacher trainees. Recently NEP 2020 is introduced and many students centered innovative teaching methods introduced for the better implementation of NEP-2020.

The NEP 2020 is a comprehensive framework that aims to revamp the education system in India. It emphasizes the integration of technology and the promotion of digital literacy. Researchers might be interested in exploring how digital storytelling aligns with the goals and objectives set forth in the NEP. Digital storytelling presents a unique opportunity to enhance learning experiences by integrating multimedia elements such as images, videos, and interactive features. Researchers may seek to investigate the effectiveness of digital storytelling as a pedagogical tool within the framework of the NEP's emphasis on innovative teaching methods.

As digital storytelling becomes increasingly integrated into educational settings, researchers may be interested in exploring methods for assessing student learning outcomes and evaluating the effectiveness of digital storytelling initiatives, aligning with the NEP's emphasis on outcome-based education and continuous evaluation.

Digital storytelling has a profound impact on the emotional and social aspects of students, fostering empathy, communication skills, and a sense of belonging. Firstly, by engaging in the creation and consumption of digital stories, students are prompted to reflect on personal experiences, perspectives, and emotions. This process not only

enhances self-awareness but also promotes empathy as students learn to understand and appreciate diverse viewpoints and life stories. Through storytelling, students develop emotional intelligence, learning to identify and express their feelings effectively, which is crucial for healthy social interactions and relationships.

Moreover, digital storytelling serves as a powerful medium for communication and collaboration, allowing students to share their stories with peers, teachers, and the broader community. This collaborative aspect fosters a sense of connection and belonging as students realize that their voices are heard and valued. Additionally, through the process of co-creating digital stories, students learn to work collaboratively, respect others' perspectives, and negotiate meaning—a vital skill set for navigating interpersonal relationships in both academic and real-world contexts.

Furthermore, digital storytelling provides a platform for students to explore complex social issues, express their opinions, and advocate for change. By engaging with narratives that address topics such as diversity, equity, and social justice, students develop critical thinking skills and a sense of social responsibility. They are empowered to become active participants in their communities, using storytelling as a tool for social change and collective action.

In essence, digital storytelling enhances the emotional and social development of students by promoting empathy, communication, collaboration, and social activism, thereby nurturing well-rounded individuals who are equipped to navigate and contribute to an increasingly interconnected world.

3.3 Population of the study

According to Kulbirsinh sindhu

"By population we mean that aggregate or totality of objects or individuals regarding which interference are to be made in a sampling study"

According to John w.Best

"A population of any groups of individuals that have one or more characteristics in common that area of the interest of researchers."

The term 'population' or universe conveys a different meaning than a traditional one. Gujarati medium primary School students of Gujarat State are the population of the present research work.

3.4 Sampling procedure

The population for this study consisted of students of Upper Primary Schools of Gujarat state. Purposive sampling technique was used wherein the sample was drawn from the two Six Primary Schools of Gujarat State.

In view of some statisticians, population is also known as universe. The representative proportion of the population is called sample. In order to select sample from a given population, it is also necessary to have a complete, accurate and up-to-date list of all the units in the population. Such a list is known as a sampling frame. After defining a population and listing all the units, a researcher selects a sample of units from the sampling frame. The process of such a selection is called sampling.

Sampling is a process by which a relatively small number of individuals on measures of individuals, objects or events is selected and analyzed in order to find out something about the entire population from it was selected. For the method of sampling, there are two categories probability sampling and non-probability sampling. In the absence of any idea of probability the method of sampling is known as non-probability. Randomization is a method of sampling in which each individual of the population has equal chance or probability of selection for constituting a sample.

As present research work is experimental research work so researcher used purposive sampling technique for the sample selection. Researcher has selected schools from Ahmedabad, Botad, Junagadh, and Kutchh Districts. Researcher has selected the urban and rural area schools for the replication of the present study. Researcher has administrated experiment in six schools so replication of the experiment also done. The details of sample selection is given in below Table 1.

Table 1: Details of Sample

Sr. No.	School Name	District	Area	No of Students	
				Control Group	Experimental Group
1	New Gayatri Higher Secondary School	Ahmedabad	Urban	20	17
2	PM Shir Yagnapururshi Primary School	Botad	Rural	22	20
3	G.S.Pansuriya Primary School	Junagadh	Urban	27	30
4	Ramji Prem Hira Gorasiya School	Kutch	Rural	36	38
5	New Vidhyavihar for Girl	Ahmedabad	Urban	21	30
6	Pay Center Shala, Ambli	Ahmedabad	Rural	23	41
Total				149	176

3.5 Research methodology

Method is defined as orderliness and regularly or habitual practice of them in action. By placing stress on 'arrangement', orderliness, regularity and habitual practice, the methodologies derive their parameters in the literature of educational research. Research methods are of utmost importance in research researcher a scientific and feasible plan for attacking and solving the problem under investigation.

Types of research method

There are basically three main categories of methods of research.

(1)Historical method

(2)Descriptive method

(3)Experimental method

In the present study researcher has used experimental method. Experimental method is a scientific method. It is oriented to the future in the sense that the researcher is seeking to evaluate something new. It is the process of contribution to the already acquired fund of knowledge. Thus, the experimenter operates under the basic assumption that the research situation one wishes to evaluate has never existed and does not exist. The purpose of experimentation is to derive verified functional relationships among phenomena under controlled conditions or more simply, to identify the conditions underlying the occurrence of a given phenomenon.

In this study the researcher has adopted experimental method to carry out research work the researcher has selected six students of upper primary schools of Gujarat State. Researcher has conducted the pre-test for the equalize the group for both control and experimental group.

3.6 Design of the study

The main objective of the research is to study the impact of digital storytelling on emotional and social aspects of the students. Research design is a plan of action; it is used to structure the research, to show how the major parts of the research project. The sample or groups measures, treatments or programmes, and method of assignment work together to try to address the central research questions.

This Study adopted an experimental method researcher has selected the two group pre-test post-test design for the study.

Table 2: Design of the study

Phase	**Control group**	**Experimental Group**
Pre-Test (Situational Test)	15 Items (Emotional Aspects) 15 Items (Social Aspects)	15 Items (Emotional Aspects) 15 Items (Social Aspects)
Experimental Interventions	Traditional Storytelling	Digital Storytelling
Post-Test (Situational Test)	15 Items (Emotional Aspects) 15 Items (Social Aspects)	15 Items (Emotional Aspects) 15 Items (Social Aspects)

Control group

The group that does not receive any experimental treatment is called the controlled group. It is the group that is not exposed to some independent variable or is exposed to another independent variable for comparison purposes. Here this group is taught by traditional storytelling method.

Experimental group

The group that is given the independent variable treatment digital storytelling method or is exposed to some independent variable and called the experimental group. Here this group is taught by digital storytelling method.

It provides the researcher an opportunity for the comparison required by the hypothesis of the experiment and enables researcher to make a meaningful interpretation of the results of the study with help of statistical analysis of the data .There are various types of experimental designs. The nature of the problem determines which type of design is most appropriate and applicable and how the design should be used to meet the experiment. The experimental design used here is two pre-test post-test design.

Characteristic of good experimental method

These characteristics are classified into two categories-

A.General characteristics and B. Specific characteristics

A. General characteristics of an experimental method

1. Bias free estimation of true effect.
2. Precision of the estimates with a quantitative index.
3. The testing of clear specific hypothesis of different intension etc.

B. Specific characteristics of an experimental method

1. It emphasizes objectively and accuracy in the collection of the data and treatment part of it.
2. It emphasizes control of conditions and the experimentation of certain variables in controlled conditions.
3. The sample is selected with great precaution and every care is taken to safeguard extraneous factors.

3.7 Variables of the study

The Independent variables, dependent variables and use in the present study are as follows:

Independent variable

An Independent variable that is being examined or tested. In this study experimental treatment through Digital Storytelling methodis proposed and therefore these was taken as independent variable. Traditional Storytelling method is also considered as independent variable.

Dependent variable

A Dependent variable is the measured or observed variable. By observing the dependent variable, the impact of the independent variables Digital Storytelling and Traditional Storytelling method on emotional and social aspects of the students.

Effectiveness is the Dependent variable which is studied in the form of difference between of the score of emotional and social development test of experimental group and control group.

Control variables

Control variable is a variable that has the potential to impact the dependent are removed or controlled by research design or Statistical manipulation. The variables that were controlled for the experiment to get homogenous groups are intelligent of the students, classes chosen for the experimental treatment, content selected, features of the school, size of the sample etc.

3.8 Selection of content

Table 3: List of digital stories

Sr.No.	Title	Title of Story in English
1	સસલોઅનેકાચબો	Rabbit and Tortoise
2	સાચોકઠિયારો	Honest woodworker
3	લાલચુરાજા	Greedy King
4	જાતમહેનતજિંદાબાદ	Hail the Hard-work
5	સુટેવ – કુટેવ	Good Habit – Bad Habit

Sr.No.	Title	Title of Story in English
6	વારસદાર!.....	The Heir….!
7	નીતિનિયમો	Rules and Regulations
8	જેવુંકરશોતેવુંપામશો	As you sow, so shall you reap
9	તૈયારીજીતની	Prepare for the Victory
10	સાતધાનનોખીચડો	The millets Story
11	સ્વચ્છતામાંપ્રભુતા	Godliness in Cleanliness
12	અસલી હીરા – મોતી	True Gems

Links of Digital Stories

1. સસલુંઅનેકાચબો

https://drive.google.com/file/d/1-omMGlAFUMIdAvJ-HAmoa6IMj67H31za/view?usp=drivesdk

2. સાચોકઠિયારો :

https://drive.google.com/file/d/1xZO4tOIdHoYODONCPN0DX-5HHCSqZx3X/view?usp=drivesdk

3. લાલચુરાજા :

https://drive.google.com/file/d/1xVXYi5a69eF-rVxQgBOJqiZii_2Cu2Sh/view?usp=drivesdk

4. જાતમહેનતજિન્દાબાદ:

https://drive.google.com/file/d/1xZa67e2ZNJvzNvJgidaPKpYUL6RfHPVe/view?usp=drivesdk

5. સુટેવકુટેવ:

https://drive.google.com/file/d/1k8EfyPn5Yl2qgqSjpRW1YFR1hSUU1Pd5/view?usp=drivesdk

6. વારસદાર:

https://drive.google.com/file/d/1kMAt_hfDEjEYsXDhtAWOiPSAxIcOFQoa/view?usp=drivesdk

7. નીતિનિયમ:

https://drive.google.com/file/d/1lD2JeK6xz_valksPjD3El3rDvjxs-lmP/view?usp=drivesdk

8. જેવુંકરશોતેવુંપામશો:

https://drive.google.com/file/d/1q5PtEtLT03aBJMiXcZ0Ijq6PV1aGJ6Rn/view?usp=drivesdk

9. તૈયારીજીતની:

https://drive.google.com/file/d/1quUWIdYay-NDJCcrk2tqDIDawIXyCWFl/view?usp=drivesdk

10. સાતધાનકાખીચડા :

https://drive.google.com/file/d/1ukZp8sRvupg_ugzKM-TjJM8JSqP74Hgl/view?usp=drivesdk

11. સ્વચ્છતામાંપ્રભુતા:

https://drive.google.com/file/d/1n7XARf2I9LXAwJKB609rlVgDOOMnfTa8/view?usp=drivesdk

12. અસલી હીરા – મોતી

https://drive.google.com/file/d/1ukZp8sRvupg_ugzKM-TjJM8JSqP74Hgl/view?usp=drivesdk

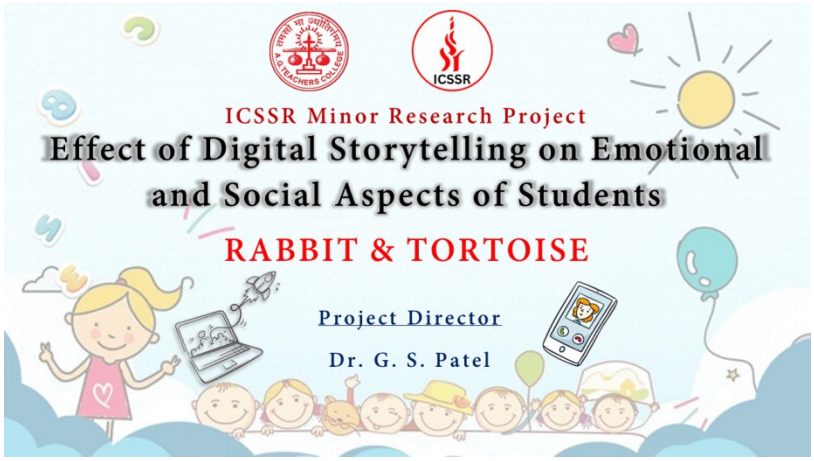
1. Rabbit and Tortoise

Based on Panchtantra, this story is about a proud rabbit and a hardworking tortoise. The Rabbit has always been proud of its tremendous speed and keeps boosting about it everywhere. While on the other hand, the Tortoise seems to be extraordinarily hard-working despite of its slow speed and never boosts about its achievement.

The story revolves around mighty rabbit boosting about its speed and the tortoise explaining it to never be proud of it, this turns into a race battle and at the end when the rabbit loses the race, it realises the importance of being down to earth as well as staying consistent in work.

Here the story depicts how important it is to stay consistent and be hard working, which will lead to a successful life. Thus, moral of the story is 'the one who is arrogant or who boosts proudly about their qualities and procrastinating their work, end up getting humiliated and losing in life. While the one who works consistently and patiently, will lead to a successful life.Through this story, a student learns….

1. To always be hardworking
2. Stay consistent in work
3. Never boost about or be proud of the good qualities

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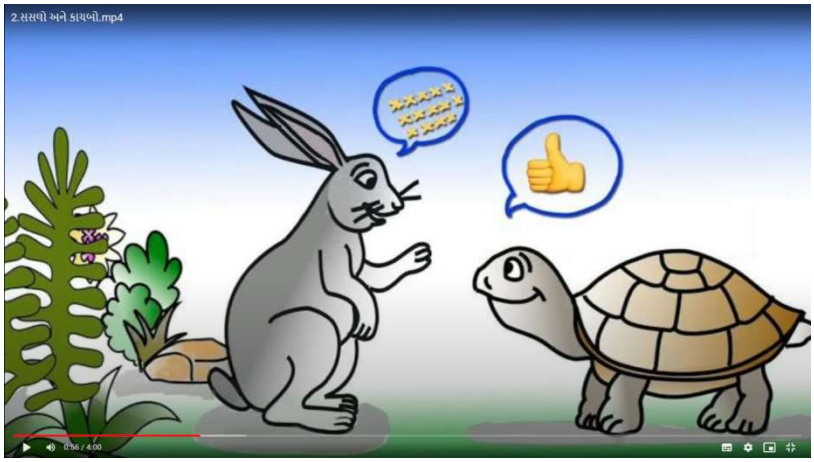
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2.સસલો અને કાચબો.mp4
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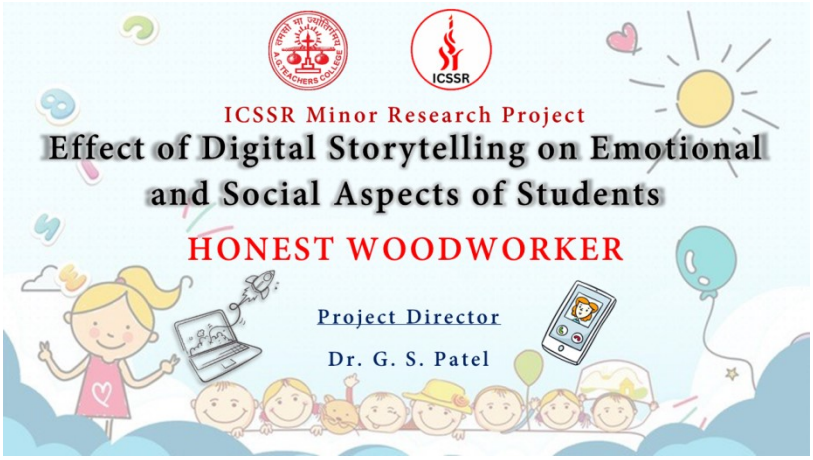
2. Honest woodworker

The story is about extremely hard-working wood worker named Mangal, who works in forest all day and tries to meet the ends for himself and his family. Mangal is not only hard working but also very honest by nature. One fine day while working in forest, Mangal lost his old rusted axe in river and the forest deity tries to test Mangal by offering him axe made of Gold and Silver, but Mangal refuses to accept the axe with honesty saying it did not belong to him. Seeing the honesty of Mangal, the forest deity gave all the axe made of Gold and Silver along with his old, rusted axe.

Manu, a friend of Mangal, became greedy on knowing about how Mangal got golden and silver axe. Manu went to the forest and knowingly threw his axe in river and waited for the forest deity to show up with golden axe. The moment forest deity came up with golden axe; Manu greedily said that it was his axe. Looking at the greed of Manu, the forest deity took away his own axe and disappeared in forest. Thus, Manu ended up losing everything he had just because of his greed.

The moral of this story is 'We should always speak truth, be honest and never fall into false temptations.' The story teaches the students to……

1. Always be honest
2. Never to be greedy
3. Hard work is key to success

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1.સાચો કઠિયારો.mp4
1:23 / 5:20


1.સાચો કઠિયારો.mp4
વન દેવતા
1:31 / 5:20

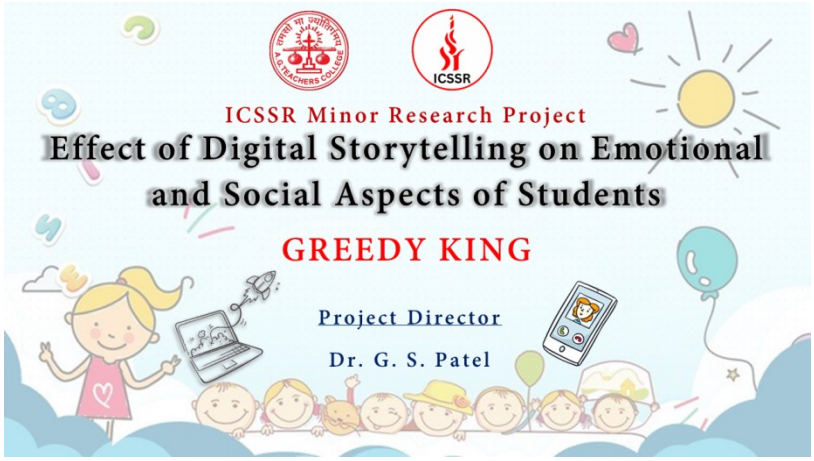
3. Greedy king

This story is based on real life incidences taken place in Greece. King Midas was an emperor of Greece stated in Europe, who was extremely fond of Gold. He had none in his family except his beloved daughter. King Midas was obsessed with Gold, and he had collected it in abundance, still was greedy about more gold. Once, he got a blessing from a Dionysus (Angel) that from the next day, whatever King Midas touches will turn into Gold.

Extremely happy with the boon, Midas hopped and jumped around in his castle touching every possible thing around him and turning it into gold. Not realising that the cloths he was wearing were also turned into gold, running everywhere, now Midas felt thirsty and hungry and demanded for food, but as soon as he touched the food and water, everything was now made of gold. He had nothing to eat or drink. Seeing him whipping in sorrow, his daughter tried to console him, but she also turned into a golden statue the moment she was in touch of her father. Midas now realised what was important for him and begged the Dionysus to turn everything to normal.

Thus, the moral of the story is 'Greed can poison a person's soul.' The students can learn from this story that….

1. Know the importance of thing and people around us.
2. Never be greedy about anything.
3. Satisfying the greed may give temporary happiness, but it will end up into lifelong sadness.




લાલચુ રાજા

4. Hail the Hard-work

This is story about a rabbit and 2 animals (cow and horse) of a farmer and 2 animals (goat and donkey) of a laundry man. These 4 animals, i.e. cow, horse, goat and donkey used to go to forest for their food together and were good friends. Rabbit notices that they always go together, so decided to be with them in order to get protection from wild dog of forest. Hopping that these animals will help him when needed, rabbit developed the friendship with them. But when he got attacked by wild dog, rabbit asked for help from everyone and no one helped him. Each one of them refused to help saying they had something to be done in urgency.

On getting rejected by everyone, rabbit realised that he should not rely on anyone to save himself. He should work hard on his own to save himself from all the problems. Thus, the moral of the story says, 'one should not be dependent on anyone else, instead one should be working hard for their own.'

From this story, students learn to….

1. Never be dependent on anyone
2. Importance of hard work
3. Nothing can come to one that is worth having, except as a result of hard work.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4.જાત મહેનત જિંદાબાદ.mp4
3:24 / 4:35

5. Good Habit – Bad Habit

The story revolves around two neighbourhood friends Suhas and Riyansh, who spent most of their time in a day. Suhas is well disciplined right from the childhood, while Riyansh was extremely notorious, demanding and stubborn by nature. One day, while returning firm school, they were discussing about birthday party of Riyansh. Riyansh stubbornly demanded a new phone from his parents as a birthday present. His parents got defeated by stubbornness of Riyansh and gifted him a smart phone. Riyansh was now addicted of his smart phone playing hazardous online games every day, losing his good grades in school and connections with friends also. On the other hand, Suhas started paying more attention to his physique and involved in outdoor games like football, volleyball, etc, also maintained his good grades.

Years passed by, Suhas has now become a great sports person having a good physique while, Riyansh due to his bad habits, become obese, fat and unhealthy. After many years, Suhas's parents decided to throw a surprise birthday party for him and invited all friends of him. During the party Riyansh realised that he had become extremely different from what he used to be in childhood. Riyansh realised that his bad habits made him miserable, and he decided to change himself for good.

Thus, the moral of this story is 'One should develop good habits in order to gain a successful life. Bad habits will lead to miserable life.'From this story, students learn to…..

1. Develop good habits and stay away from bad habits.
2. Importance of discipline in life.
3. Physical health must be maintained right from early childhood.


સુટેવ ફુટેવ

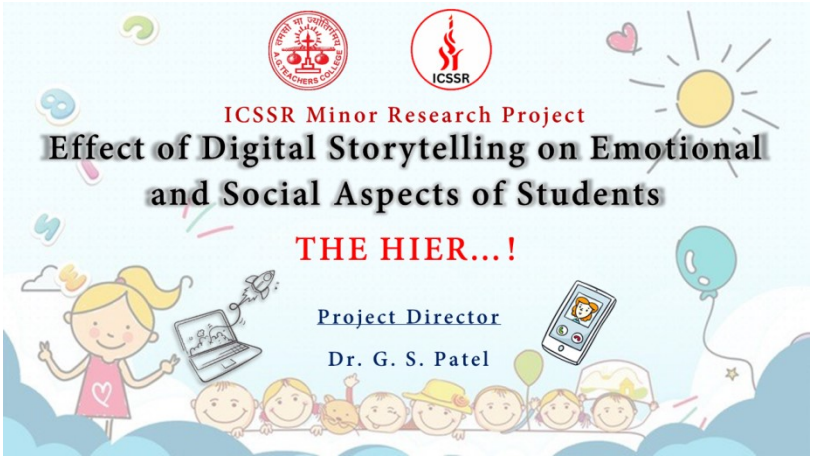

WAKING BREAKFAS
HAVING BREAKFAST
ACCMMUTING
STUDYING
RELEXING SLEEPING

6. The Heir….!

This story is about a King who was willing to pass-on his emperorship to his one of the two sons. He had decided to give the responsibility of his kingdom to his son not on based on their age, but on the basis of who is hard working, smart and is able to take responsibility of whole kingdom. For this purpose, he decided to take a test of his both the sons. He gave 1000 rupees to both the sons, same sized rooms to each of them and asked them to fill the rooms completely with any object purchased from those 1000 rupees only. Both the son had one week of time, after one week, when the king asked about their rooms, elder son rudely responded to the king saying he had filled the room. On opening the room, king saw the room full of garbage and had extremely bad smell. King got angry on him and to his anger, the elder son behaved rudely saying, how he can fill a room with just 1000 rupees.

Now it was turn of the younger son, on checking his room, king found that the room was filled with lights of lots of oil lamps and sweet smell of incense sticks. King was extremely impressed with younger son and made him his Heir. Thus, the story helps students to learn….

1. Utilise the available resources in optimum ways.
2. Never be rude or disrespectful to anyone.
3. Act smart and think every possible solution for problems of life.



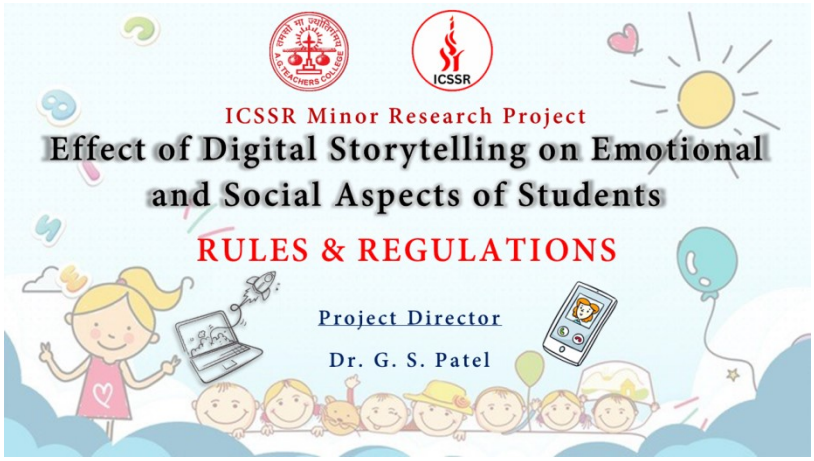

વારસદાર!!!!

7. Rules and Regulations

Nilesh, a rich boy who with his bunch of friends had never followed a single traffic rule in their life, had a friend named Sanjay, who was from an ordinary family. One evening Sanjay tried to explain Nilesh that he should not break traffic rule or drive the car so speedily. Nilesh scolded Sanjay saying, "these rules are not for us rich people, they are made for you poor ones." Nilesh's father saw and scolded him badly; also, he took away his car. Seeing that Nilesh's father is scolding him, those rich friends who were enjoying the high-speed ride of car, ran away from back doors. Angry Nilesh left home, but all of a sudden, a high-speed car came and almost crashed him, but fortunately he was saved by Sanjay.

This made him realise the importance of traffic rules, which lead to make him an ideal citizen. He also suggested different CSR ideas and projects to the company he joined. This helped him to get promotion and a good position in his company. Thus, the students learn that….

1. Traffic rules are for all, no discrimination of rich and poor is allowed.
2. Traffic rules are for cordial management of the society and its functioning.
3. One should make others understand the importance of rules and regulations of traffic.




નીતિ-નિયમો


CSR
CORPORATE SOCIAL RESPONSIBILITY

8. As you sow, so shall you reap...!

Ratangadh, a beautiful state, was famous for the discipline maintained by their king, Maharaja Ratan Singh. Once the king decided to test the dutifulness of his soldiers and selected three soldiers named Yashpal, Dharampal and Shurveer. All three were given an empty Sack of jute and were ordered to fill it with fresh fruits within a day, from the biggest fruit farm of the kingdom. On their return, King ordered to put all of them behind the bars individually for several days, without providing anything to them. They had to survive on the fruits they brought from farm. Yashpal was the first one to fill the sack as he had filled it with grass and leaves and very few fruits, he could not survive for more than two days without food. Dharampal had filled half of the sack with rotten fruits and half with fresh fruits, which helped him to survive for very few days. While, Shurveer had picked each and every fruit very carefully, which lead him to survive for a long period of time, which also proved his loyalty and dutifulness towards work assigned to him.Thus, the story teaches the students to…

1. Any work assigned, must be done with at most loyalty.
2. Dutifulness towards work leads to success.
3. Honesty and integrity is the key to an outstanding performance in life.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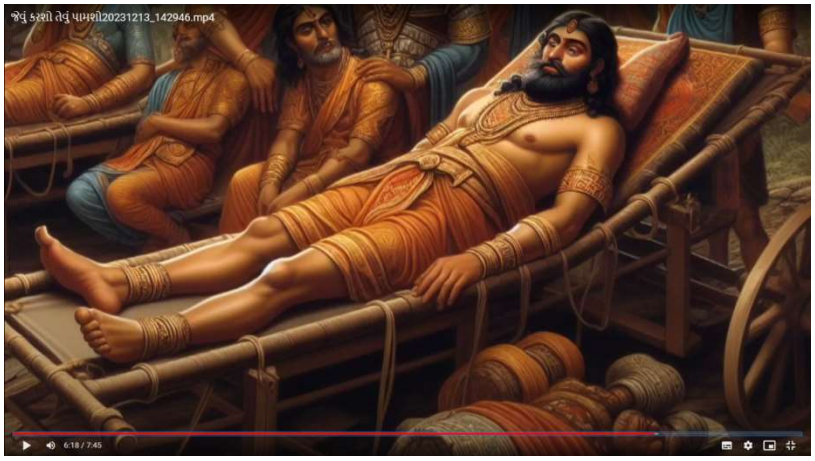
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9. Prepare for the Victory

The story takes the students on a ride to a beautiful forest named Sundarvan, where all the animals lived in harmony. Other surrounding forests used to praise Sundarvan for its prosperity. King of forest was Sherkhan the lion, who always thought of betterment of the forest. Once, in a general assembly of all the forest ministers, King proposed to train any one kid of animals for the post of Chief Commander so that, when that kid grows up, it can handle the work swiftly. Everyone agreed to what king said and started discussing about whose child to be selected for the post, all the animals, including Python, tiger, elephant and monkey suggested their own kids for this post.

King decided to take a five-level test which included long jump, wrestling, IQ test, elocution and running test. All the kids got to know about the test and thought of winning it. Each of them was boosting about their powers, but Bunny the rabbit was silently preparing for the test. Everyone laughed on him as he was tiny, saying that how he could win all the levels. Bunny ignored them and kept working hard for the test. Surprisingly at the day of test, out of five levels, bunny cleared three levels, was declared the winner of the test and was given training of Chief Commander. Thus, this story teaches the students to….

1. Work hard for every test of life.
2. Never boost about your abilities or powers.
3. Hard work and continuous practice leads to victory.

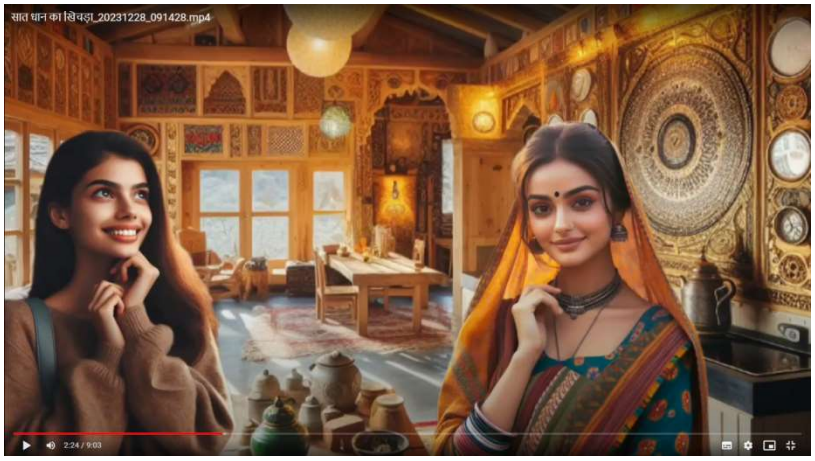

તૈયારી જીતની!!!

10. The millets Story

Brought up in foreign country, Indian culture rooted, Sonal was extremely happy as she was flying back to India for a visit at her grandmother's place. Not knowing hometown Indian culture, Sonal was excited about her visit as she wanted to explore her home town. Her grandmother welcomed her happily and made her delicious traditional food. Rupal, childhood friend of Sonal, took her to visit the market of their village and offered her variety of food items which Sonal had never tasted.

The visit to village made Sonal realise that traditional food made of grams, millets and pulses, etc. have always been powerhouse of nutrition. Sonal on returning to foreign country decided to open a restaurant which served Indian dishes filled with nutrition.Through this story, students will learn….

1. Junk food might have temporary taste, but it is extremely harmful for the body.
2. Home cooked food is full of nutrition
3. Grains like millets, pulses, wheat, rice, grams and peas etc. are source of nutrition.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11. Godliness in Cleanliness

Any person, in their entire life, follow three different rites or rituals, they are Motherly (Matruj) rites, Fatherly (Pitruj) rites and Outer (Bahya) rites. This is a story about a boy named Nigam, who grew up in a very righteous and ideal family. His mother and grandmother always kept the house and surrounding clean and made Nigam learn it. But due to his association with wrong friends, he learnt bad habits and started using abusive language. On getting multiple complains from school and other parents, his grandfather explained him the importance of intellectual cleanliness. One cannot lead to be a good example in society, if that person is not physically, mentally and intellectually clean and conscious.

Nigam was now very much inspired by what his grandfather taught and started changing himself for good. He was also inspired by Mahatma Gandhi that inspired him to write a report on Cleanliness and Pollution control, which lead to make him win a National Level certificate from his school. Thus with the help of this story, students can learn that…

1. Cleanliness leads to a healthy environment.
2. Not only physical, but also mental and intellectual cleanliness is must.
3. One should speak with at most politeness. Never to use any sort of abusive language.
4. Our behaviour reflects our rites and culture.


સ્વચ્છતા માં પ્રભુતા!!


SCHOOL


HIGH SCHOOL

13. True Gems

The story, True Gems, is about a respectable couple named Pareshbhai & Karunaben. They had two boys, whom they have raised to be able to live life worthily, by facing lots of efforts. They have always avoided the acts of show off, and to avoid such thing they decided to get their children married in their 'cast samuh vivah'. After their marriage, they decided to go on a religious trip leaving everything in the hands of new daughter in laws.

Wife of elder son was sharp and didn't like to do any hard work, while younger son's wife was extremely hard working, calm and helping by nature. With the passage of time, due to improper nature of 1st son's wife, both the brothers decided to part ways. For taking care of both the elders, their decided to take care of them for every 6 months. 2nd son's wife took the initiative and took Pareshbhai and Karunaben at their home. She took their care with whole heart, which resulted into getting gems magically from cloths of Pareshbhai & Karunaben. Listening to this, elder son's wife got jealous and greedy and decided to do the same. But her main motive was to get the gems, so she didn't focus on taking care of their parents. At the end, she realised that 'the one who serves whole heartedly gets the true gems'Students will learn to….

1. Be respectful to their parents.
2. Never boost / show off about any achievements.
3. Greed doesn't give success in life.

Researcher has carefully created the digital stories for the emotional and social development of the students.

Emotional and Social Aspects Measurement Test

Researcher has created emotional and social measurement test for the data collection. Both tests consist 15 items each. There are situational test belongs to emotional and social development of the students. These test are considered as pre-test and post-test. Researcher has reviewed the different emotional and social development test on the bases of this researcher has developed these test. This situational test and scoring pattern of it is attached in Appendix-A and B.

3.9 Data collection

Data collection is essentially an important part of the research process. During this process inference, hypothesis or generalization tentatively held may be identified by

as valid, verified as correct, or rejected as untenable. The data in the present study is in the form of score of emotional and social aspects measurement scale.

Researcher has administrated the series of experiment in the different areas of Gujarat State. The details of school and timeline of experiment is given below table.

Table 4: Experiment schedule

Sr. No.	School Name	District	Duration of Experiment	
			From	To
1	New Gayatri Higher Secondary School	Ahmedabad	22/12/2023	3/01/2024
2	PM Shir Yagnapurusdas Primary School	Botad	5/01/2024	20/01/2024
3	Late G.S. Pansuriya Primary School	Junagadh	22/12/2023	3/01/2024
4	Ramji Prem Hira Gorasiya School	Kutch	6/01/2024	20/01/2024
5	Pay Center Shala, Ambli	Ahmedabad	16/01/2024	29/01/2024
6	New Vidhyavihar for Girl	Ahmedabad	5/02/2024	17/02/2024

Researcher appointed file investigator for the data collection Process. Researcher gave training to the filed investigator hot collect the data. Researcher firstly take the permission of selected school and filed investigator went there for the experiment and data collection, Field investigator first take pre-test for emotional and social aspects of the students. As this is experimental research filed investigator have to conduct lecture for the data collection. Researcher has created 12 digital stories . After teaching students of control and experimental group, with different methodologies i.e. experimental group with Digital Storytelling and controlled group with Oral Storytelling, a post-test is administered. These scores of post-test are the data for the researcher.

3.10 Data analysis

The data are presented in tables and figures accompanied by textual discussion.The tables and figures are constructed and listed in such a way that clarify significant procedures are used for the analysis of the data and are clearly specified and explained in this section.

The researcher has tabulated the data in the tables. Researcher presented the data descriptive with the help of Jamovi data analysis software. calculated Student's t-test, Welch's t-test Mann Whitney U-test for testing null hypothesis. Researcher also created Plots Graph, and Scatter Graph for the graphical presentation of the data.

3.11 Chapter summary

The research design outlined in this section provides a comprehensive framework for investigating the impact of digital storytelling on students' emotional and social development within the context of the National Education Policy (NEP) 2020. By employing an experimental method and purposive sampling, the study aims to systematically assess the effectiveness of digital storytelling as a pedagogical tool in comparison to traditional storytelling methods. Through careful selection of variables, including independent, dependent, and control variables, and the curation of relevant digital stories, the research design ensures methodological rigor and validity. By structuring the study around a two-group pre-test post-test design, the researcher seeks to measure changes in students' emotional and social aspects before and after engaging in digital storytelling activities. This approach not only contributes to the ongoing discourse on innovative teaching methods but also has implications for educational policy and practice, particularly in the context of fostering empathy, communication skills, and social awareness among students.

Chapter four: Data analysis and interpretation

4.1 Introduction

4.2 Testing of Null hypothesis

Chapter four: Data analysis and interpretation

4.1 Introduction

Following the meticulous design of the research methodology outlined in Chapter 3, this section embarks on the process of analyzing the collected data and interpreting its implications. Utilizing both quantitative and qualitative techniques, this chapter delves into the examination of students' emotional and social development in response to digital storytelling interventions. The data analysis encompasses a range of statistical measures, including descriptive statistics, inferential statistics, and correlation analysis, aimed at uncovering patterns, trends, and relationships within the dataset.

Researcher has administrated the experiment in which filed investigator taught the control group thorough oral storytelling method and Digital Storytelling method to the experimental group. Researcher has administrated the pre-test and post-test to collect the data of emotional and social aspects of the students.

After data collection researcher has tabulated all the data according to group wise and variable wise and after that researcher make necessary calculation for the data analysis and interpretation which is presented in this chapter.

4.2 Testing of Null hypothesis

In this research work researcher put focus on the effect of digital storytelling on Emotional and Social Aspects of the students. For that researcher has created situational test to measure the emotional and social aspects of the students. This test based on the digital story and its moral. The details of each digital story and its emotional and social moral are discussed in chapter-3.

Researcher has conducted experiment in six urban and rural areas schools of Gujarat State. In this section researcher has presented the data analysis and interpretation school wise.

Experiment-1

New Gayatri Higher Secondary School , Ahmedabad, Urban Area

The main objective of the research work is to check the effect of Digital Storytelling on emotional and social aspects of the students. Therefore researcher has created the situational test to measure the emotional and social aspects of the students. There are 15 statements in each test. Researcher has collected the data through experiment and

tabulated all the data as per the variable. Researcher has collected the data from the control and experimental group.

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-tests of Emotional Aspects of students of control group and experimental group.

Table 5 provides data on emotional quotient (EA) scores for a control group and an experimental group, comparing pre-test EA scores with post-test EA scores. It also includes the gain scores for both groups.

Table 5: Pre-test and Post test Emotional Aspects scores of students for control and experimental groups (School-1)

Experimental Group			Control Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
36	36	0	36	60	24
31	32	1	33	55	22
32	32	0	35	58	23
34	33	-1	39	55	16
35	43	8	34	60	26
36	35	-1	36	46	10
37	44	7	32	60	28
31	36	5	33	54	21
38	43	5	34	56	22
32	35	3	32	59	27
36	35	-1	31	58	27
33	36	3	35	59	24
34	35	1	38	52	14
32	35	3	39	58	19
36	35	-1	34	54	20
35	39	4	38	60	22

Experimental Group			Control Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
33	42	9	36	57	21
31	45	14			
32	41	9			
32	42	10			

From Table 5, Control Group: This group did not receive the experimental treatment and serves as a baseline to measure the natural change in EA scores over time. For example, the first row shows a Pre EA score of 36, a Post Test EA score of 36, resulting in no difference (0), and thus a Gain Score of 0.Experimental Group: This group received experimental treatment intended to improve their EA scores. For example, the first row shows a Pre EA score of 36, a Post Test EA score of 60, resulting in a difference of 24, and a Gain Score of 40.

Table 5 result indicates the experimental group generally shows an increase in post-test EA scores compared to the control group and the differences and gain scores in the experimental group are consistently higher than those in the control group, indicating the potential effectiveness of the intervention. This is represented in the Figure 1

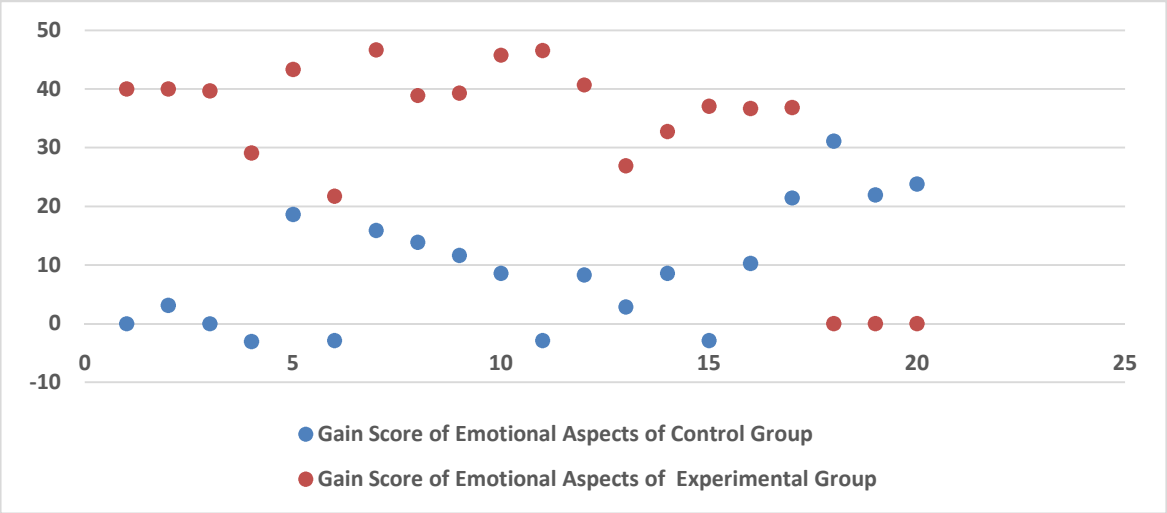

Figure 1: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-1

In Figure 1, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 1 clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

To accept or reject the null hypothesis, the data of pretest score on emotional aspect were run on Jamovi and analysed, t-test is used to test the null hypothesis that two groups have the same mean. A low p-value suggests that the null hypothesis is not true, and therefore the group means are different. The descriptives table from the Jamovi t-test output provides summary statistics for the pre-test scores on emotional aspects for both the control group and the experimental group. as presented in Table 6.

Table 6: Descriptives table of pre-test score Emotional Aspects of School-1

Measures	**A**	**Pre-Test Score Emotional Aspects**
N	0 Control Group	20
	1 Experimental Group	17
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	33.8
	1 Experimental Group	35
Median	0 Control Group	33.5
	1 Experimental Group	35
Standard Deviation	0 Control Group	2.19
	1 Experimental Group	2.47
Minimum	0 Control Group	31
	1 Experimental Group	31
Maximum	0 Control Group	38
	1 Experimental Group	39

Table 6 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (35) compared to the control group (33.8). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 38; Experimental Group: 31 to 39), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of emotional aspects of students of control and experimental group as indicated in Table 7.

Table 7: Comparison of Pre-Test Scores on Emotional Aspects between Control and Experimental Groups of School-1

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.56	35.00	0.127	1.20	0.767	-0.357	2.76	**Cohen's d**	0.516
Welch's t	1.55	32.30	0.131	1.20	0.775	-0.378	2.78	**Cohen's d**	0.513
Mann-Whitney U	124		0.157	1.00				**Rank Biserial Correlation**	0.274

Table 7 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.56 with 35 degrees of freedom, yielding a p-value of 0.127. This indicates that the observed difference in means (1.20) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.55 with 32.30 degrees of freedom, and the p-value is 0.131.

The mean difference remains 1.20, with a slightly different standard error of 0.775. The 95% confidence interval for Welch's t-test is -0.378 to 2.78, also crossing zero. The effect size, Cohen's d, is 0.513, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 124 and a p-value of 0.157, indicating no significant difference between the groups. The mean difference in ranks is reported as 1.00. The effect size, measured by the rank biserial correlation, is 0.274, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 7 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there will be no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.So, both groups are equal.

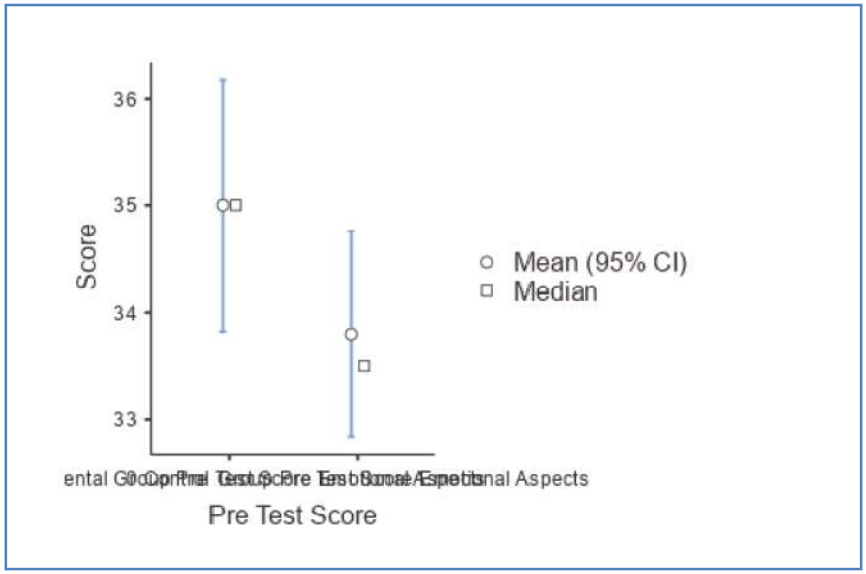

Figure 2: Comparison of Pre-Test Scores of Students of Emotional Aspects of School-1

From Figure 2 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 33.8 with a 95% confidence interval spanning approximately from 33 to 35 and the mean score for the experimental group is around 35 with a 95% confidence interval spanning approximately from 34 to 36. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-tests of Emotional Aspects of students of control group and experimental group.

Table 8: Descriptives table of post-test score Emotional Aspects of School-1

Measures	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	20
	1 Experimental Group	17
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	37.7
	1 Experimental Group	56.5
Median	0 Control Group	36
	1 Experimental Group	58
Standard Deviation	0 Control Group	4.22
	1 Experimental Group	3.68
Minimum	0 Control Group	32
	1 Experimental Group	46
Maximum	0 Control Group	45
	1 Experimental Group	60

Table 8 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (56.5) compared to the control group (37.7). Also, the medians being the same as the means for the experimental group (58) and close for the control group (36) suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for experimental group (3.65), for control group (4.22), suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is not similar for both groups (Control Group: 32 to 45; Experimental Group: 46 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of control and experimental group as indicated in Table 9.

Table 9: Comparison of Post-Test Scores on Emotional Aspects between Control and Experimental Groups of School -1

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	14.3	35.00	< .001	18.80	1.31	6.35	3.09	**Cohen's d**	-4.73
Welch's t	14.5	35.00	< .001	18.80	1.3	-3.56	3.32	**Cohen's d**	-4.76
Mann-Whitney U	0		< .001	19.00				**Rank Biserial Correlation**	1

Table 9 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 14.3 with 35 degrees of freedom, yielding a p-value of < .001 This indicates that the observed difference in means (18.80) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 14.50 with 35.00 degrees of freedom, and the p-value is < .001. The mean difference remains 18.80, with a slightly different standard error of 1.31. The 95% confidence interval for Welch's t-test is -3.56 to 3.32, also crossing zero. The effect size, Cohen's d, is -4.76, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in Post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 0 and a p-value of < .001, indicating significant difference between the groups. The mean difference in ranks is reported as 19.00. The effect size, measured by the rank biserial correlation, is 1.00, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences statistically significant.

While all tests in Table 9 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well meaningfully effect. Therefore, the null hypothesis—that there will no difference in Post-test scores between the control and experimental groups—is rejected based on this analysis. So, we can say that Digital Storytelling method is better for the development of emotional aspects of the students.

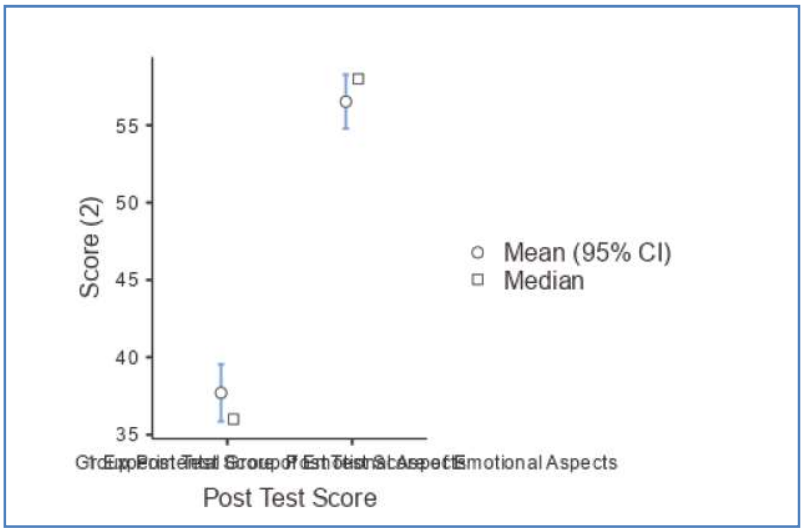

Figure 3: Comparison of Post-Test Scores of Students of Emotional Aspects of School-1

From Figure 3 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 37.7 with a 95% confidence interval spanning approximately from 36 to 38 and the mean score for the experimental group is around 58 with a 95% confidence interval spanning approximately from 56.5 to 58 . Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups do not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of pre-test of Social Aspects of students of control group and experimental group.

Table 10: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-1

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
31	32	1	35	60	24
28	31	3	36	60	22
29	30	1	32	60	23
35	36	1	32	60	16
36	38	2	33	60	26
35	36	1	34	44	10
34	35	1	35	60	28
31	34	3	36	55	21
32	34	2	35	56	22
30	31	1	32	60	27

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
29	32	3	41	60	27
34	36	2	40	60	24
41	42	1	42	56	14
42	42	0	43	60	19
41	43	2	44	57	20
41	42	1	45	60	22
40	41	1	46	60	21
40	42	2			
32	33	1			
35	36	1			

Figure 4: Pre-test and Post test Social Aspects scores for control and experimental groups of School-1

Figure 4 , chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher

post-test scores compared to the control group. Figure 4 clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 11: Descriptives table of pre-test score Social Aspects of School-1

Measure	**A**	**Pre Test Score Social Aspects**
N	0 Control Group	20
	1 Experimental Group	17
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.8
	1 Experimental Group	37.7
Median	0 Control Group	34.5
	1 Experimental Group	36
Standard Deviation	0 Control Group	4.62
	1 Experimental Group	4.91
Minimum	0 Control Group	28
	1 Experimental Group	32
Maximum	0 Control Group	42
	1 Experimental Group	46

Table 11 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (37.7) compared to the control group (34.8). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 28 to 42; Experimental Group: 32 to 46), indicating a similar spread in the scores. Hence,

this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 12.

Table 12: Comparison of Pre-Test Scores on social aspects between Control and Experimental Groups of school-1

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.85	35.00	0.072	2.91	1.57	-6.09	0.28	**Cohen's d**	-0.611
Welch's t	1.84	33.30	0.074	2.91	1.58	-6.11	0.30	**Cohen's d**	-0.61
Mann-Whitney U	109		0.062	3.00		-6	6.09 E-5	**Rank Biserial Correlation**	0.362

Table 12 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.85 with 35 degrees of freedom, yielding a p-value of 0.072. This indicates that the observed difference in means (2.91) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.84 with 33.30 degrees of freedom, and the p-value is 0.074. The mean difference remains 2.91, with a slightly different standard error of 1.58. The 95% confidence interval for Welch's t-test is -6.09 to 0.28, also crossing zero. The effect size, Cohen's d, is -061, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 109 and a p-value of 0..062 , indicating no significant difference between the groups. The mean difference in ranks is reported as 3.00. The effect size, measured by the rank biserial correlation, is 0.362, suggesting a small to moderate effect. While this non-

parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 12 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

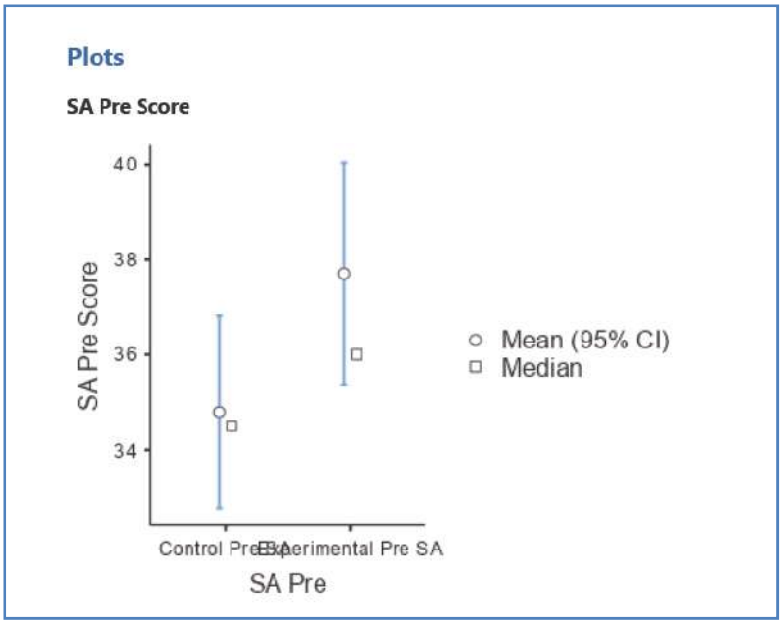

Figure 5: Comparison of Pre-Test Scores of Students of Social Aspects of School-1

From Figure 5 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.8 with a 95% confidence interval spanning approximately from 33 to 35 and the mean score for the experimental group is around 37.7 with a 95% confidence interval spanning

approximately from 37 to 40. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-tests of Social Aspects of students of control group and experimental group.

Table 13: Descriptives table of post-test score Social Aspects of School-1

Measures	**A**	**Post Test Score Social Aspects**
N	0 Control Group	20
	1 Experimental Group	17
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	36.3
	1 Experimental Group	58.1
Median	0 Control Group	36
	1 Experimental Group	60
Standard Deviation	0 Control Group	4.33
	1 Experimental Group	4.04
Minimum	0 Control Group	30
	1 Experimental Group	44
Maximum	0 Control Group	43
	1 Experimental Group	60

Table 13 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (58.1) compared to the control group (36.3). Also, the medians being the same as the means for the experimental group (60) and close for the control group (36) . suggest that the score of control group is symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is not similar for both groups (Control Group: 30

to 43; Experimental Group: 44 to 60), indicating a varied spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 14.

Table 14: Comparison of PostTest Scores on Social Aspects between Control and Experimental Groups of School-1.

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	15.7	35.00	< .001	21.80	1.39	-24.6	-19.00	**Cohen's d**	-5.19
Welch's t	15.8	34.70	< .001	21.80	1.38	-24.6	-19.00	**Cohen's d**	-5.21
Mann-Whitney U	0		< .001	24.00		-25	-18.00	**Rank Biserial Correlation**	1

Table 14 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 15.7 with 35 degrees of freedom, yielding a p-value of < .001 This indicates that the observed difference in means (21..80) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 15.8 with 34.70 degrees of freedom, and the p-value is < .001. The mean difference remains 21.80, with a slightly different standard error of 1.38. The 95% confidence interval for Welch's t-test is -24.6 to -19.00. The effect size, Cohen's d, is -5.21, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in Post-test scores is statistically significant.

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 0 and a p-value of < .001, indicating significant difference between the groups. The mean difference in ranks is reported as 18.00. The effect size, measured by the rank biserial

correlation, is 1.00, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences statistically significant.

While all tests in Table 14 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well meaningful effect. Therefore, the null hypothesis—that there is no difference in Post-test scores between the control and experimental groups—is rejected based on this analysis. So we can say that digital storytelling techniques useful to develop social aspects among students.

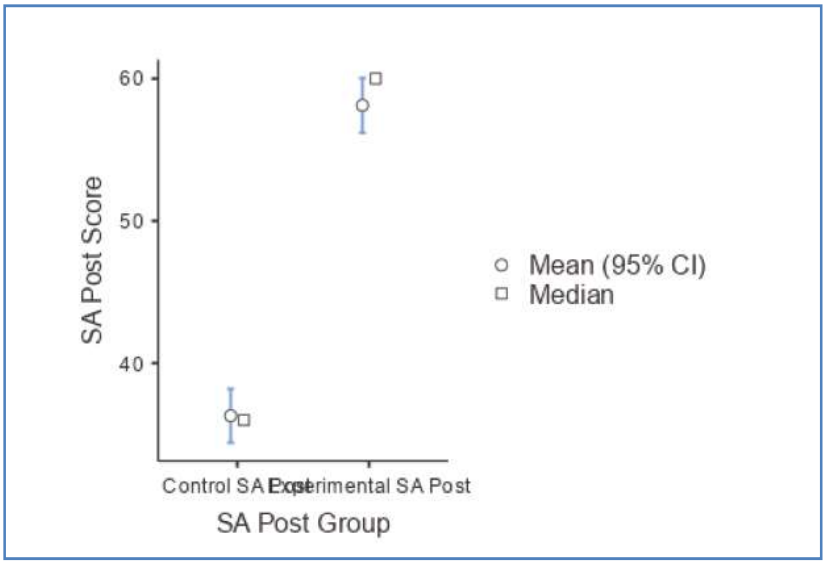

Figure 6: Comparison of Post-Test Scores of Students of Social Aspects of School-1

From Figure 6 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 36.3 with a 95% confidence interval spanning approximately from 36 to 38 and the mean score for the experimental group is around 58.1 with a 95% confidence interval spanning approximately from 56 to 60 . Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups are overlapped , indicating that there is a significant difference between the means of the control and experimental groups.

Experiment-2

PM Shir Yagnapururshh Primary School, Rural Area

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-test of Emotional Aspects of students of control group and experimental group.

Table 15: Pre-test and Post-test Emotional Aspects scores of students for control and experimental groups of School-2

Control Group				**Experimental Group**		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**		**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
32	35	3		33	48	15
35	36	1		35	46	11
34	38	4		36	53	17
41	43	2		41	57	16
42	44	2		42	57	15
32	35	3		40	51	11
41	42	1		42	58	16
42	43	1		43	49	6
32	34	2		38	50	12
32	35	3		39	48	9
34	36	2		35	48	13
38	40	2		36	49	13
42	43	1		37	56	19

Control Group				Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**		**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
41	43	2		41	58	17
45	48	3		42	50	8
32	35	3		33	58	25
32	31	-1		36	54	18
32	35	3		35	55	20
33	34	1		32	54	22
31	35	4		33	57	24
32	35	3				
32	34	2				

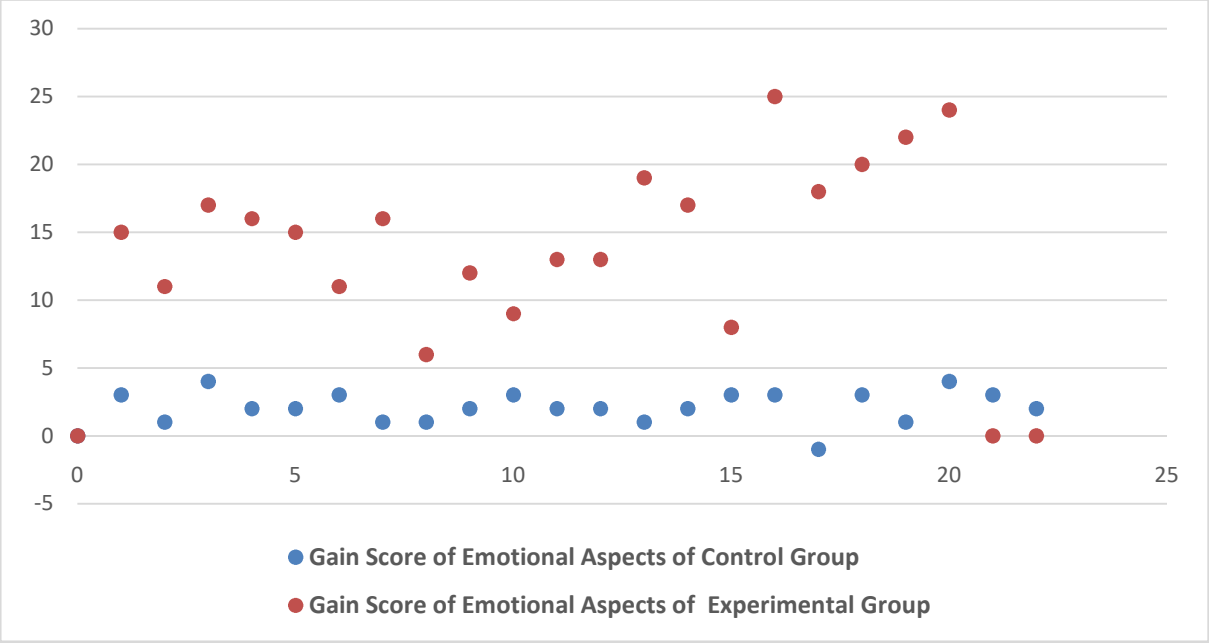

Figure 7: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-2

In Figure 7, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 8 clearly shows the

improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

Table 16: Descriptives table of pre-test score Emotional Aspects of School-2

Measure	**A**	**Pre Test Score Emotional Aspects**
N	0 Control Group	22
	1 Experimental Group	20
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35.8
	1 Experimental Group	37.5
Median	0 Control Group	33.5
	1 Experimental Group	36.5
Standard Deviation	0 Control Group	4.65
	1 Experimental Group	3.56
Minimum	0 Control Group	31
	1 Experimental Group	32
Maximum	0 Control Group	45
	1 Experimental Group	43

Table 16 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (37.5) compared to the control group (35.8). Also, the medians being the also differ (36.5) experimental group compared to the control group (33.5, the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to

45; Experimental Group: 32 to 43), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of emotional aspects of students of control and experimental group as indicated in Table 17.

Table 17: Comparison of pre-test Scores on Emotional aspects between Control and Experimental Groups of School-2

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.3	40.00	0.2	1.68	1.29	-4.28	0.93	**Cohen's d**	0.402
Welch's t	1.32	38.90	0.195	1.68	1.27	-4.25	0.90	**Cohen's d**	0.405
Mann-Whitney U	150		0.075	2.00		-4.00	3.84 E-5	**Rank Biserial Correlation**	0.32

Table 17 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.3 with 40 degrees of freedom, yielding a p-value of 0.2. This indicates that the observed difference in means (1.68) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.32 with 38.90 degrees of freedom, and the p-value is 0.195. The mean difference remains 1.68, with a slightly different standard error of 1.27. The 95% confidence interval for Welch's t-test is -4.25 to 0.90, also crossing zero. The effect size, Cohen's d, is 0.405, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant.

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 150 and a p-value of 0.075 , indicating no significant difference between the groups. The mean difference in ranks is reported as 4.00. The effect size, measured by the rank biserial correlation, is 0.32 , suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 17 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

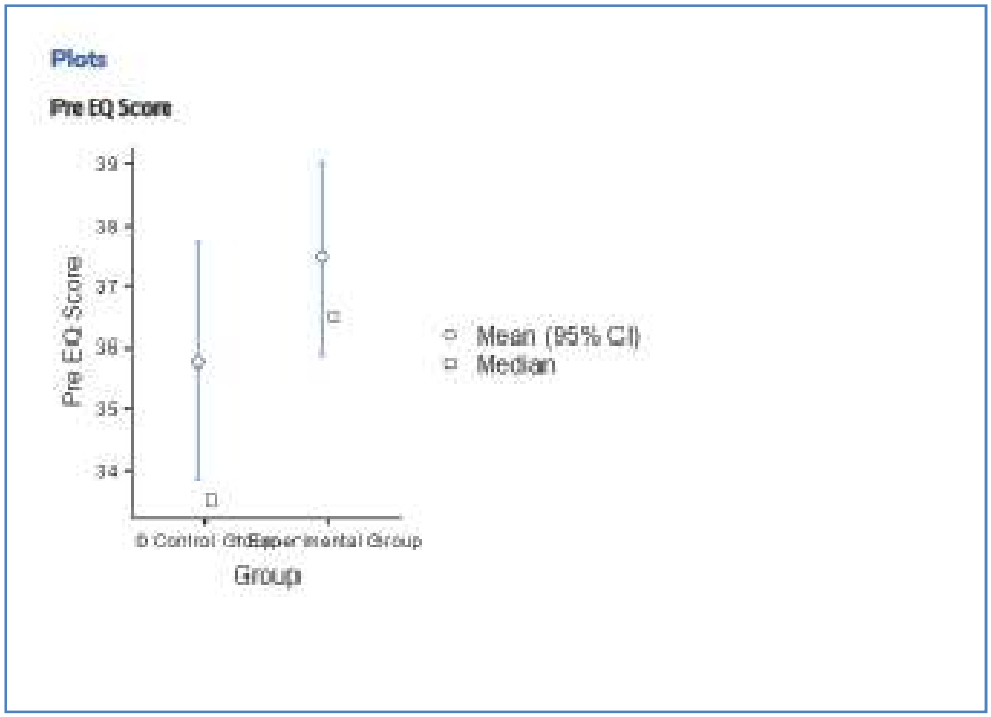

Figure 8: Comparison of Pre-Test Scores of Students of Emotional Aspects of School-2

From Figure 8 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence

intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35.8 with a 95% confidence interval spanning approximately from 36 to 39 and the mean score for the experimental group is around 37.5 with a 95% confidence interval spanning approximately from 33 to 38. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Emotional Aspects of students of control group and experimental group.

Table 18: Descriptives table of post-test score Emotional Aspects of School-2

Measures	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	22
	1 Experimental Group	20
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	37.9
	1 Experimental Group	52.8
Median	0 Control Group	35.5
	1 Experimental Group	53.5
Standard Deviation	0 Control Group	4.49
	1 Experimental Group	4.07
Minimum	0 Control Group	31
	1 Experimental Group	46
Maximum	0 Control Group	48
	1 Experimental Group	58

Table 18 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (52.8) compared to the control group (37.9). Also, the medians being the same as the means for the

experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 48; Experimental Group: 46 to 58), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of emotional aspects of students of control and experimental group as indicated in Table 19.

Table 19: Comparison of post-test Scores on Emotional aspects between Control and Experimental Groups of School-2

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	11.2	40.00	< .001	14.90	1.33	-17.6	-12.20	**Cohen's d**	-3.46
Welch's t	11.3	40.00	< .001	14.90	1.32	-17.6	-12.20	**Cohen's d**	-3.47
Mann-Whitney U	2.5		< .001	15.00		-18	-13	**Rank Biserial Correlation**	0.989

Table 19 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 11.2 with 40 degrees of freedom, yielding a p-value of < 0.001 . This indicates that the observed difference in means (14.90) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 11.3 with 40.00 degrees of freedom, and the p-value is < 0.001. The mean difference remains 14.90, with a slightly different standard error of

1.32. The 95% confidence interval for Welch's t-test is -17.6 to -12.0. The effect size, Cohen's d, is -3.47, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 2.5 and a p-value of < .001, indicating significant difference between the groups. The mean difference in ranks is reported as 15.00. The effect size, measured by the rank biserial correlation, is 0.989 , suggesting a moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 19indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is a statistically significant. This implies that the observed differences in post- test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups— rejected based on this analysis.

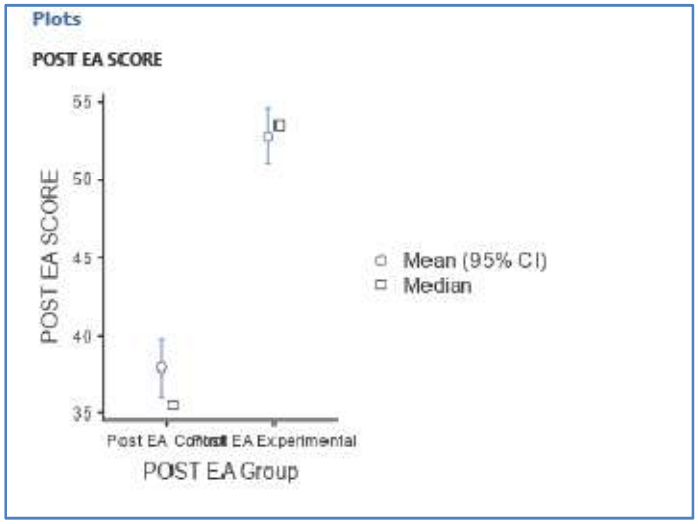

Figure 9: Comparison of Post-Test Scores of Students of Emotional Aspects of School-2

From Figure 9 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence

intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 37.9 with a 95% confidence interval spanning approximately from 36 to 40 and the mean score for the experimental group is around 52.8 with a 95% confidence interval spanning approximately from 52 to 54 . Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups are not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Social Aspects

Ho_2 There will be no significant difference between the average score of pretest of Social Aspects of students of control group and experimental group.

Table 20: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-2

Control Group			**Experimental Group**		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
36	37	1	33	49	16
34	36	2	35	50	15
35	36	1	38	54	16
36	38	2	36	59	23
35	36	1	38	54	16
35	36	1	35	38	3
36	37	1	34	59	25
34	36	2	37	54	17
32	34	2	31	57	26
35	36	1	34	40	6
32	33	1	35	59	24
35	35	0	31	60	29
36	38	2	36	60	24

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
38	39	1	37	60	23
32	36	4	39	59	20
31	34	3	31	60	29
32	36	4	32	58	26
32	34	2	32	59	27
32	34	2	36	46	10
35	36	1	37	55	18
34	36	2			
41	43	2			

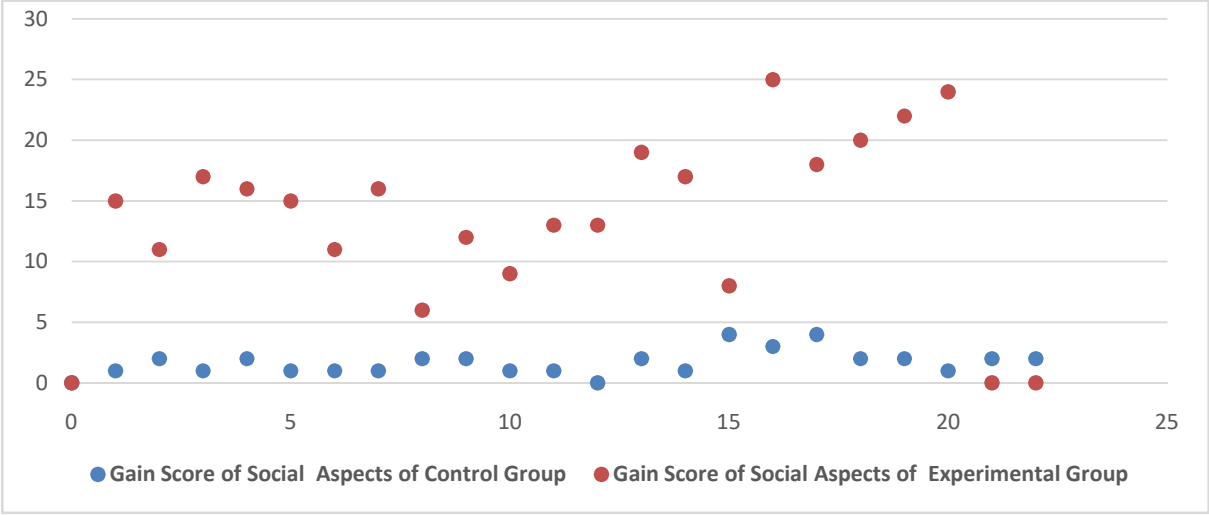

Figure 10: Pre-test and Post test Social Aspects scores for control and experimental groups of School-2

Figure 10, chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 10 clearly shows the improvement in SA scores for individuals, with the experimental group generally

having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 21: Descriptives table of pre-test score Social Aspects of School-2

Measure	**A**	**Pre Test Score Social Aspects**
N	0 Control Group	22
	1 Experimental Group	20
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.5
	1 Experimental Group	34.9
Median	0 Control Group	35
	1 Experimental Group	35
Standard Deviation	0 Control Group	2.34
	1 Experimental Group	2.52
Minimum	0 Control Group	31
	1 Experimental Group	31
Maximum	0 Control Group	41
	1 Experimental Group	39

Table 21 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (34.9) compared to the control group (34.5). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 41; Experimental Group: 31 to 39), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further,

to see how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 22.

Table 22: Comparison of pre-test Scores on Social aspects between Control and Experimental Groups of School-2

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.527	40.00	0.601	-0.40	0.75	-1.91	1.12	**Cohen's d**	-0.163
Welch's t	0.525	38.90	0.602	-0.40	0.753	-1.92	1.13	**Cohen's d**	-0.163
Mann-Whitney U	192		0.475	-1.00		-2	1	**Rank Biserial Correlation**	0.13

Table 22 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.527 with 40 degrees of freedom, yielding a p-value of 0.601. This indicates that the observed difference in means (0.40) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 0.525 with 38.90 degrees of freedom, and the p-value is 0.602. The mean difference remains 0.40 with a slightly different standard error of 0.753. The 95% confidence interval for Welch's t-test is -0.91 to 1.12, also crossing zero. The effect size, Cohen's d, is -0.163 , closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 192 and a p-value of 0.475 , indicating no significant difference between the groups. The mean difference in ranks is reported as 1.00. The effect size, measured by the rank biserial correlation, is 0.13, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align

with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 22 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

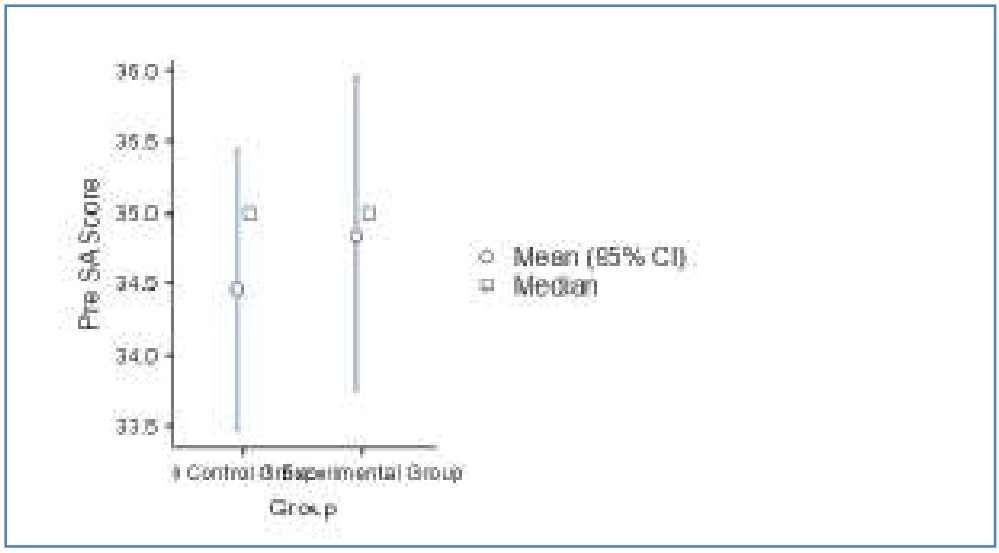

Figure 11: Comparison of Pre-Test Scores of Students of Social Aspects of School-2

From Figure 11 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.5 with a 95% confidence interval spanning approximately from 31 to 35 and the mean score for the experimental group is around 34.9 with a 95% confidence interval spanning approximately from 33 to 35. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals)

for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Social Aspects of students of control group and experimental group.

Table 23: Descriptives table of Post-test score Social Aspects of School-2

Measure	A	Post Test Score Social Aspects
N	0 Control Group	22
	1 Experimental Group	20
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	36.2
	1 Experimental Group	54.5
Median	0 Control Group	36
	1 Experimental Group	57.5
Standard Deviation	0 Control Group	2.11
	1 Experimental Group	6.68
Minimum	0 Control Group	33
	1 Experimental Group	38
Maximum	0 Control Group	43
	1 Experimental Group	60

Table 23 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (54.5) compared to the control group (36.2). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively high for experimental group (6.68) compared to control group (2.11). The range of scores (difference between minimum and maximum) is varied for both groups (Control Group: 33 to 43; Experimental Group: 38 to 60), indicating a larger spread in the scores in experimental group. Hence, this descriptive analysis explains the basic distribution and central tendency of the post -test scores for social aspects in both the control and experimental groups.

Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 24.

Table 24: Comparison of post-test Scores on Social aspects between Control and Experimental Groups of School-2

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	12.2	40.00	< 0.001	-18.30	1.5	-21.3	-15.30	**Cohen's d**	-3.78
Welch's t	11.7	22.40	< 0.001	-18.30	1.56	-21.5	-15.10	**Cohen's d**	-3.7
Mann-Whitney U	4		< 0.001	-21.00		-23.00	-17.00	**Rank Biserial Correlation**	0.982

Table 24 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 12.2 with 40 degrees of freedom, yielding a p-value of < 0.001 . This indicates that the observed difference in means (18.30) is a statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 11.7 with 22.40 degrees of freedom, and the p-value is < 0.001. The mean difference remains 18.30, with a slightly different standard error of 1.56. The 95% confidence interval for Welch's t-test is -21.5 to -15.10, not crossing zero. The effect size, Cohen's d, is -3.7, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post -test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 4 and a p-value of < 0.001 , indicating significant difference between the groups. The mean difference in ranks is reported as 21.00. The effect size, measured by the rank biserial correlation, is 0.982, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 24 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—is rejected.

Figure 12: Comparison of Post-Test Scores of Students of Social Aspects of School-2

From Figure 12 presentations, we have two plots, the top plot is comparing post -test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 36.2 with a 95% confidence interval spanning approximately from 36 to 38 and the mean score for the experimental group is around 54.5 with a 95% confidence interval spanning approximately from 54 to 56. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Experiment-3

G.S.Pansuriya Primary School, Junagadh

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-test of Emotional Aspects of students of control group and experimental group.

Table 25: Pre-test and Post test Emotional Aspects scores of students for control and experimental groups School-3

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score	Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score
35	34	-1	32	48	16
34	36	2	33	59	26
32	34	2	35	54	19
36	37	1	35	56	21
32	36	4	34	56	22
32	34	2	31	58	27
35	38	3	32	56	24
32	34	2	36	53	17
31	35	4	35	58	23
34	35	1	32	59	27
32	35	3	32	59	27
32	35	3	30	54	24
32	36	4	35	59	24
35	35	0	34	51	17
36	36	0	36	54	18
32	34	2	33	48	15
32	34	2	31	59	28
32	34	2	32	50	18
31	33	2	34	60	26
34	33	-1	32	56	24

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
32	35	3	35	57	22
32	36	4	32	53	21
31	35	4	31	58	27
32	36	4	32	59	27
32	34	2	33	60	27
35	34	-1	34	58	24
34	34	0	31	59	28
			32	59	27
			35	60	25
			36	59	23

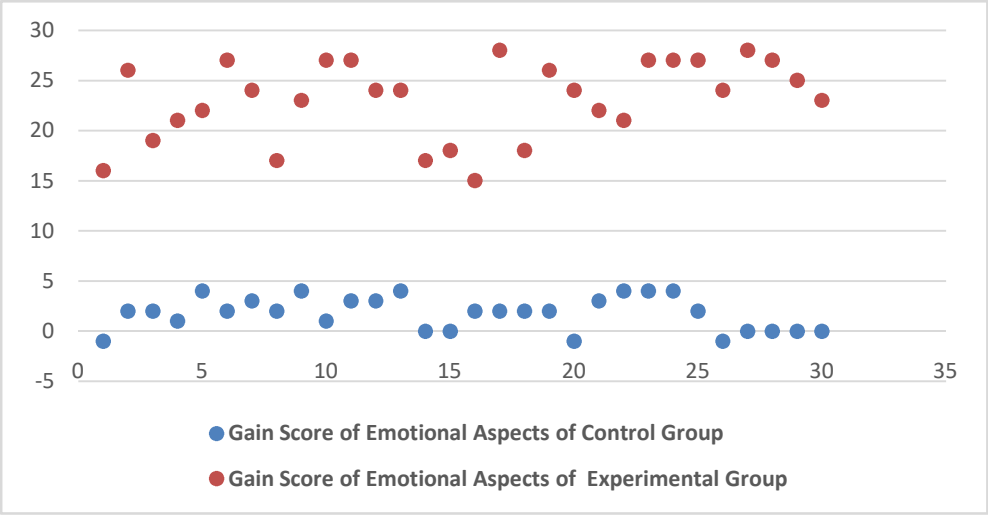

Figure 13: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-3

In Figure 13, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot clearly shows the improvement in EA scores for individuals, with the experimental group generally

having higher post-test scores compared to the control group. Figure 14 clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

Table 26: Descriptives table of Pre-test score Emotional Aspects of School-3

Measure	**A**	**Pre Test Score Emotional Aspects**
N	0 Control Group	27
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	32.9
	1 Experimental Group	33.2
Median	0 Control Group	32
	1 Experimental Group	33
Standard Deviation	0 Control Group	1.57
	1 Experimental Group	1.74
Minimum	0 Control Group	31
	1 Experimental Group	30
Maximum	0 Control Group	36
	1 Experimental Group	36

Table 26 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (33.2) compared to the control group (32.9). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference

between minimum and maximum) is similar for both groups (Control Group: 31 to 36; Experimental Group: 33 to 36), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of emotional aspects of students of control and experimental group as indicated in Table 27.

Table 27: Comparison of pre-test Scores on Emotional aspects between Control and Experimental Groups School-3

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.546	55.00	0.587	0.24	0.441	-1.12	6.43	**Cohen's d**	0.145
Welch's t	0.549	55.00	0.585	0.24	0.439	-1.12	0.64	**Cohen's d**	0.145
Mann-Whitney U	371		0.577	0.00		-1.00	2.10	**Rank Biserial Correlation**	0.084

Table 27 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.546 with 55 degrees of freedom, yielding a p-value of 0.587. This indicates that the observed difference in means (0.24) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 0.549 with 55 degrees of freedom, and the p-value is 0.585. The mean difference remains 0.24, with a slightly different standard error of 0.439. The 95% confidence interval for Welch's t-test is -1.12 to 0.64, also crossing zero. The effect size, Cohen's d, is 0.145, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 371 and a p-value of 0.577 , indicating no significant difference between the groups. The mean difference in ranks is reported as 0.00. The effect size, measured by the rank biserial correlation, is 0.084, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 27 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

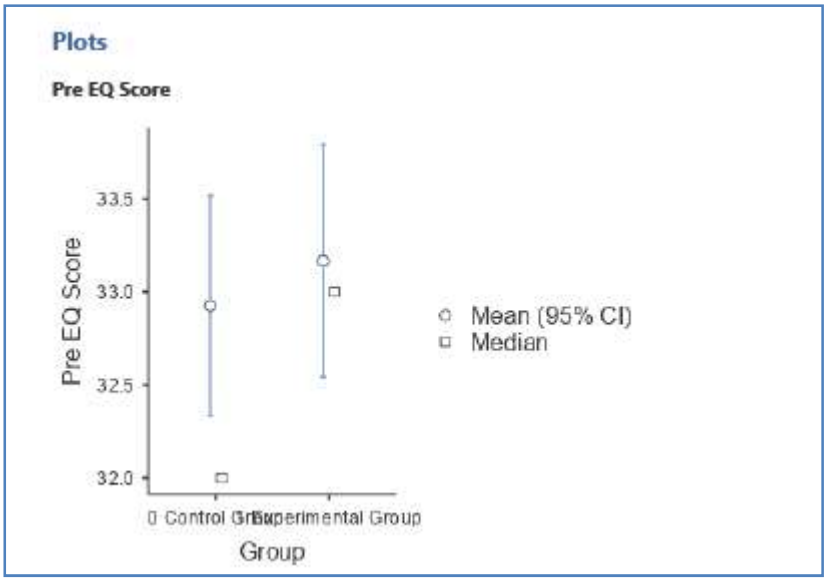

Figure 14: Comparision of Pre-Test Scores of Students Emotional Aspects of School-3

From Figure 14 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 32.9 with a 95% confidence interval spanning approximately from 32 to 34 and the mean score for the experimental group is around 33.2 with a 95% confidence interval spanning approximately from 32 to 35. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_1There will be no significant difference between the average score of post -test of Emotional Aspects of students of control group and experimental group.

Table 28: Descriptives table of Post-test score Emotional Aspects of School-3

Measure	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	27
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.9
	1 Experimental Group	56.3
Median	0 Control Group	35
	1 Experimental Group	58
Standard Deviation	0 Control Group	1.19
	1 Experimental Group	3.53
Minimum	0 Control Group	33
	1 Experimental Group	48
Maximum	0 Control Group	38
	1 Experimental Group	60

Table 28 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (56.3) compared to the control group (34.9). Also, the medians being the same as the means for the

experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively differed for both groups, control group (1.19), experimental group (3.53), suggesting that the scores are varied from the mean. The range of scores (difference between minimum and maximum) is not similar for both groups (Control Group: 33 to 38; Experimental Group: 48 to 60), indicating a varied spread in the scores in experimental group. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of control and experimental group as indicated in Table 29.

Table 29: Comparison of post-test Scores on Emotional aspects between Control and Experimental Groups School-3

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	30	55.00	< .001	21.40	0.714	-22.8	-20.00	**Cohen's d**	-7.95
Welch's t	31.3	36.10	< .001	21.40	0.685	-22.8	-20.00	**Cohen's d**	-8.12
Mann-Whitney U	0		< .001	22.00		-24.00	-21.00	**Rank Biserial Correlation**	1

Table 29 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 30 with 55 degrees of freedom, yielding a p-value of < 0.001. This indicates that the observed difference in means (21.40) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 31.3 with 36.10 degrees of freedom, and the p-value is < 0.001. The mean difference remains 21.40, with a slightly different standard error of 0.685. The 95% confidence interval for Welch's t-test is -22.8 to -20.00. The effect size,

Cohen's d, is -8.12 , closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 0 and a p-value of < 0.001 , indicating significant difference between the groups. The mean difference in ranks is reported as 22.00. The effect size, measured by the rank biserial correlation, is 1.00 , suggesting significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 29 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—is rejected.

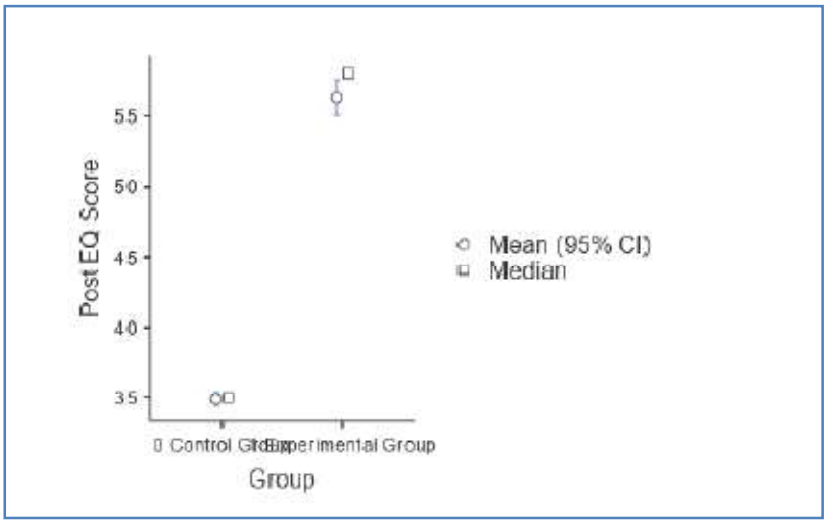

Figure 15: Comparison of Post-test Scores of Students of Emotional Aspects of School-3

From Figure 15 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence

intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.9 with a 95% confidence interval spanning approximately from 34 to 36 and the mean score for the experimental group is around 56.3 with a 95% confidence interval spanning approximately from 56 to 58. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups are not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Social Aspects

Ho_2 There will be no significant difference between the average score of pre-tests of Social Aspects of students of control group and experimental group.

Table 30: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-3

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Difference**
42	43	1	52	59	7
32	34	2	32	60	28
41	43	2	41	53	12
42	44	2	42	57	15
32	35	3	32	58	26
32	36	4	32	60	28
34	34	0	34	59	25
38	40	2	38	59	21
42	43	1	42	60	18
41	43	2	41	57	16
45	46	1	45	60	15
32	33	1	32	60	28
32	34	2	32	60	28

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Difference**
32	34	2	32	55	23
33	36	3	33	59	26
31	34	3	31	55	24
32	34	2	32	60	28
32	35	3	35	56	21
35	37	2	36	60	24
34	37	3	32	60	28
32	33	1	32	57	25
36	37	1	32	60	28
32	34	2	34	60	26
35	36	1	35	60	25
36	38	2	32	60	28
38	39	1	31	60	29
32	34	2	32	60	28
			33	60	27
			35	60	25
			31	59	28

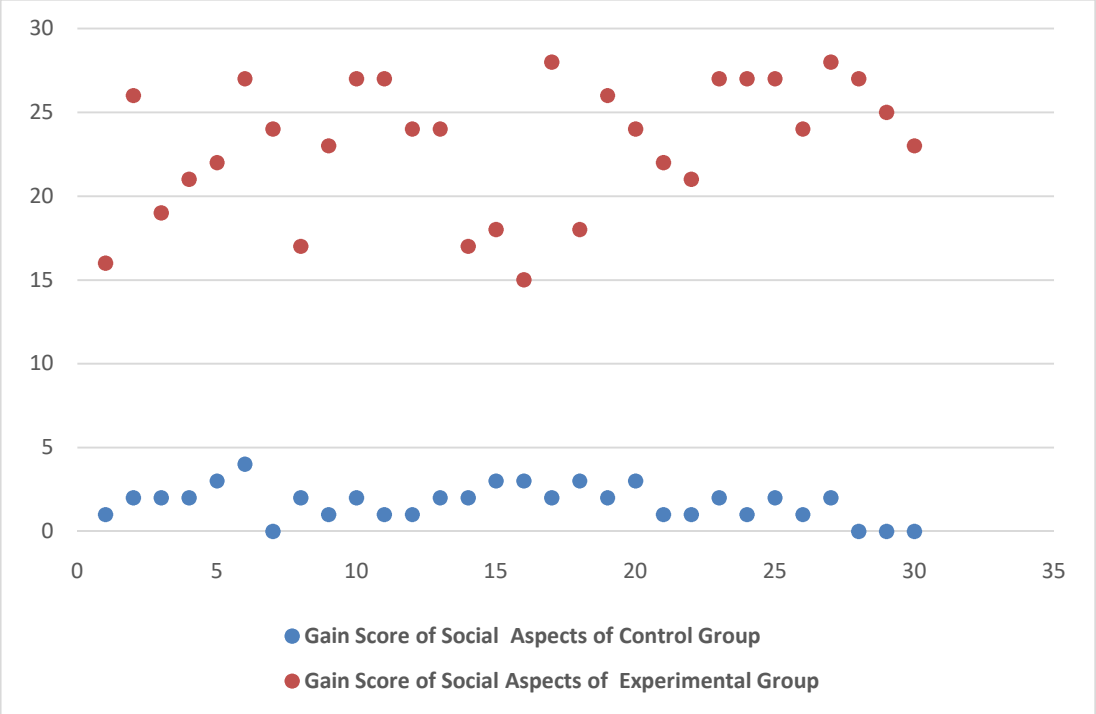

Figure 16: Pre-test and Post test Social Aspects scores for control and experimental groups of School-3

Figure 16, chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 17 clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 31: Descriptives table of Pre-test score Social Aspects of School-3

Measure	A	Pre Test Score Social Aspects
N	0 Control Group	27
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35.4
	1 Experimental Group	35.1
Median	0 Control Group	34
	1 Experimental Group	32.5
Standard Deviation	0 Control Group	4.19
	1 Experimental Group	5.03
Minimum	0 Control Group	31
	1 Experimental Group	31
Maximum	0 Control Group	45
	1 Experimental Group	52

Table 31 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly lower (35.1) compared to the control group (35.4). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 45; Experimental Group: 31 to 52), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 32.

Table 32: Comparison of pre-test Scores on Social aspects between Control and Experimental Groups School-3

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.219	55.00	0.827	0.27	1.23	-2.2	2.74	**Cohen's d**	0.0581
Welch's t	0.221	54.70	0.826	0.27	1.22	-2.18	2.72	**Cohen's d**	0.0584
Mann-Whitney U	365		0.513	3.64		-1.00	2.00	**Rank Biserial Correlation**	0.0988

Table 32 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.219 with 55 degrees of freedom, yielding a p-value of 0.827. This indicates that the observed difference in means (0.27) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 0.221 with 54.70 degrees of freedom, and the p-value is 0.826 . The mean difference remains 0.27, with a slightly different standard error of 1.22. The 95% confidence interval for Welch's t-test is –2.2 to 2.74, also crossing zero. The effect size, Cohen's d, is 0.0584, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 365 and a p-value of 0.513, indicating no significant difference between the groups. The mean difference in ranks is reported as 3.64 . The effect size, measured by the rank biserial correlation, is 0.0988, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 32 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

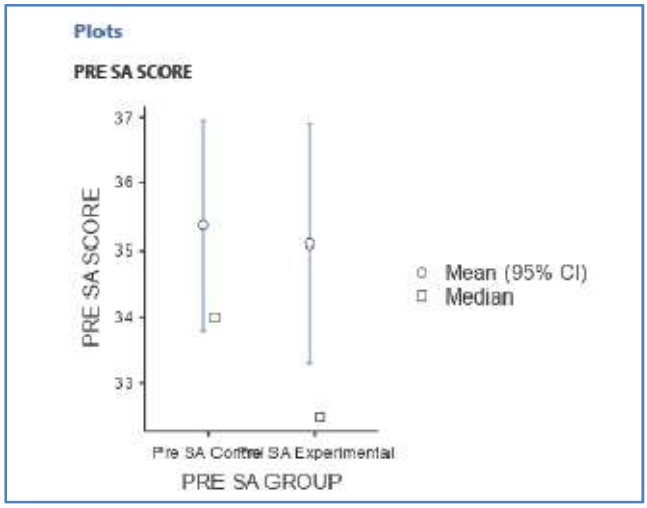

Figure 17: Comparison of Pre -test Scores of Students of Social Aspects of School-3

From Figure 17 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35.4 with a 95% confidence interval spanning approximately from 33 to 37 and the mean score for the experimental group is around 35.1 with a 95% confidence interval spanning approximately from 34 to 37. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Social Aspects of students of control group and experimental group.

Table 33: Descriptives table of Post-test score Social Aspects of School-3

Measure	A	Post Test Score Social Aspects
N	0 Control Group	27
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	37.3
	1 Experimental Group	58.8
Median	0 Control Group	36
	1 Experimental Group	60
Standard Deviation	0 Control Group	3.93
	1 Experimental Group	1.91
Minimum	0 Control Group	33
	1 Experimental Group	53
Maximum	0 Control Group	46
	1 Experimental Group	60

Table 33 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (58.8) compared to the control group (37.3). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively different for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 33 to 46; Experimental Group: 53 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the

post-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 34.

Table 34: Comparison of post-test Scores on Social aspects between Control and Experimental Groups School-3

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	26.7	55.00	< .001	-21.50	0.805	-23.1	-19.90	**Cohen's d**	-7.09
Welch's t	25.8	36.70	< .001	-21.50	0.832	-23.2	-19.80	**Cohen's d**	-6.97
Mann-Whitney U	0		< .001	-23.00		-24.00	-21.00	**Rank Biserial Correlation**	1

Table 34 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 26.7 with 55 degrees of freedom, yielding a p-value of < 0.001. This indicates that the observed difference in means (21.50) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 25.8 with 36.70 degrees of freedom, and the p-value is < 0.001. The mean difference remains 21.50, with a slightly different standard error of 0.832. The 95% confidence interval for Welch's t-test is -23.20 to - 19.80. The effect size, Cohen's d, is -6.97, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 0 and a p-value of < 0.001, indicating significant difference between the groups. The mean difference in ranks is reported as -24.00. The effect size, measured by the rank biserial correlation, is 1.00 , suggesting a significant effect. While this non-parametric test is

less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 34 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—cannot be accepted based on this analysis.

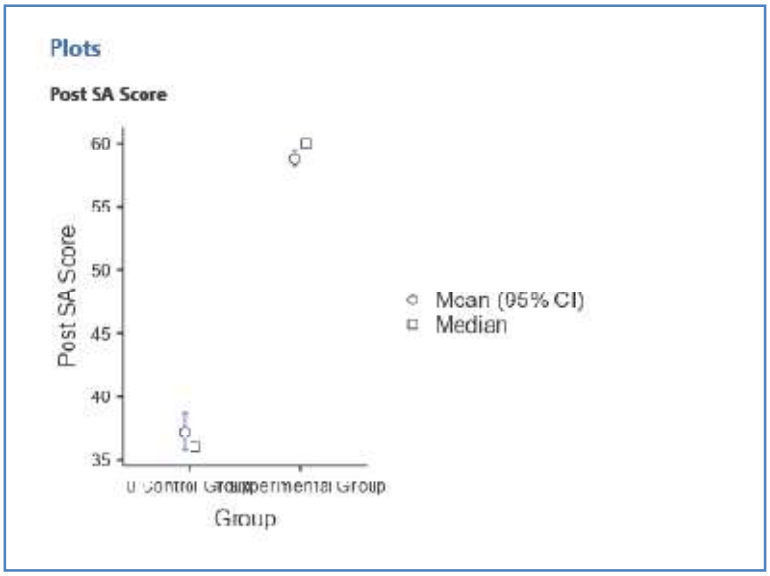

Figure 18: Comparison of Post -test Scores of Students of Social Aspects of School-3

From Figure 18 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 37.3 with a 95% confidence interval spanning approximately from 36 to 41 and the mean score for the experimental group is around 58.8 with a 95% confidence interval spanning approximately from 58 to 60. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals)

for the two groups do not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Experiment-4

Ramji Prem Hira Gorasiya School, Kutchh, Rural

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-test of Emotional Aspects of students of control group and experimental group.

Table 35: Pre-test and Post test Emotional Aspects scores of students for control and experimental groups School-4

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score	Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score
32	33	1	32	58	26
36	33	-3	36	55	19
32	34	2	32	57	25
32	35	3	32	55	23
35	34	-1	33	57	24
32	34	2	35	52	17
31	33	2	31	55	24
34	36	2	30	48	18
32	35	3	32	54	22
32	34	2	33	51	18
32	34	2	36	50	14
35	36	1	34	55	21
36	37	1	32	54	22
32	34	2	31	35	4
31	34	3	33	45	12
32	33	1	32	55	23
32	33	1	31	54	23

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
35	36	1	30	49	19
34	35	1	35	46	11
32	35	3	34	45	11
36	35	-1	32	56	24
32	35	3	33	56	23
32	34	2	31	56	25
35	33	-2	35	57	22
32	33	1	32	56	24
31	35	4	31	56	25
34	35	1	33	56	23
32	34	2	34	51	17
32	35	3	32	57	25
32	33	1	31	58	27
35	34	-1	33	52	19
36	35	-1	34	56	22
32	34	2	32	56	24
41	43	2	30	57	27
40	42	2	31	57	26
42	43	1	33	56	23
			35	48	13
			31	45	14

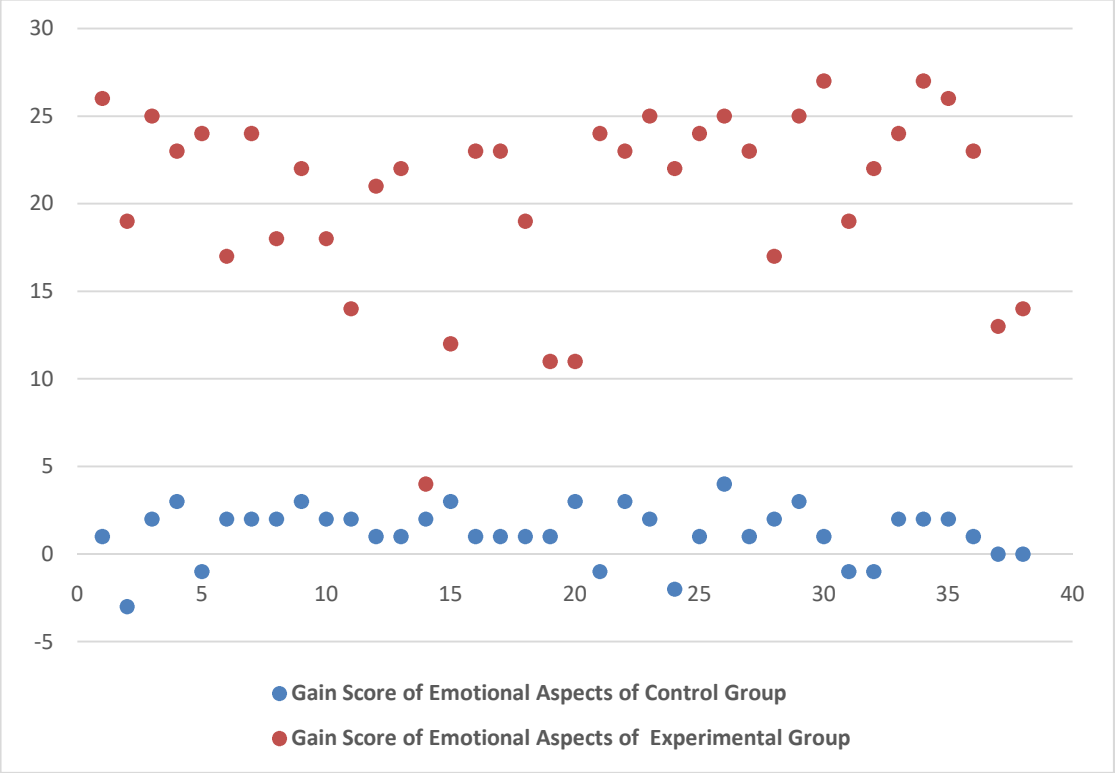

Figure 19: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-4

In Figure19, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 19 clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

Table 36: Descriptives table of Pre-test score Emotional Aspects of School-4

Measure	A	Pre Test Score Emotional Aspects
N	0 Control Group	36
	1 Experimental Group	21
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	33.7
	1 Experimental Group	32.7
Median	0 Control Group	32
	1 Experimental Group	32
Standard Deviation	0 Control Group	2.75
	1 Experimental Group	1.77
Minimum	0 Control Group	31
	1 Experimental Group	30
Maximum	0 Control Group	42
	1 Experimental Group	36

Table 36 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly lower (32.7) compared to the control group (33.7). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 42; Experimental Group: 30 to 36), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of

emotional aspects of students of control and experimental group as indicated in Table 37.

Table 37: Comparison of pre-test Scores on Emotional aspects between Control and Experimental Groups School-4

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.95	72.00	0.033	1.14	0.524	0.0979	2.19	**Cohen's d**	0.507
Welch's t	1.94	56.40	0.036	1.14	0.531	0.0791	2.20	**Cohen's d**	0.504
Mann-Whitney U	537		0.102	1.00		1.26	1.00	**Rank Biserial Correlation**	0.215

Table 37 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.95 with 72 degrees of freedom, yielding a p-value of 0.033. This indicates that the observed difference in means (1.14) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.94 with 56.40 degrees of freedom, and the p-value is 0.036. The mean difference remains 1.14, with a slightly different standard error of 0.531. The 95% confidence interval for Welch's t-test is 0.0791 to 2.20 , also crossing zero. The effect size, Cohen's d, is 0.504, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 537 and a p-value of 0.102, indicating no significant difference between the groups. The mean difference in ranks is reported as 1.00. The effect size, measured by the rank biserial correlation, is 0.215, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align

with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 37indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

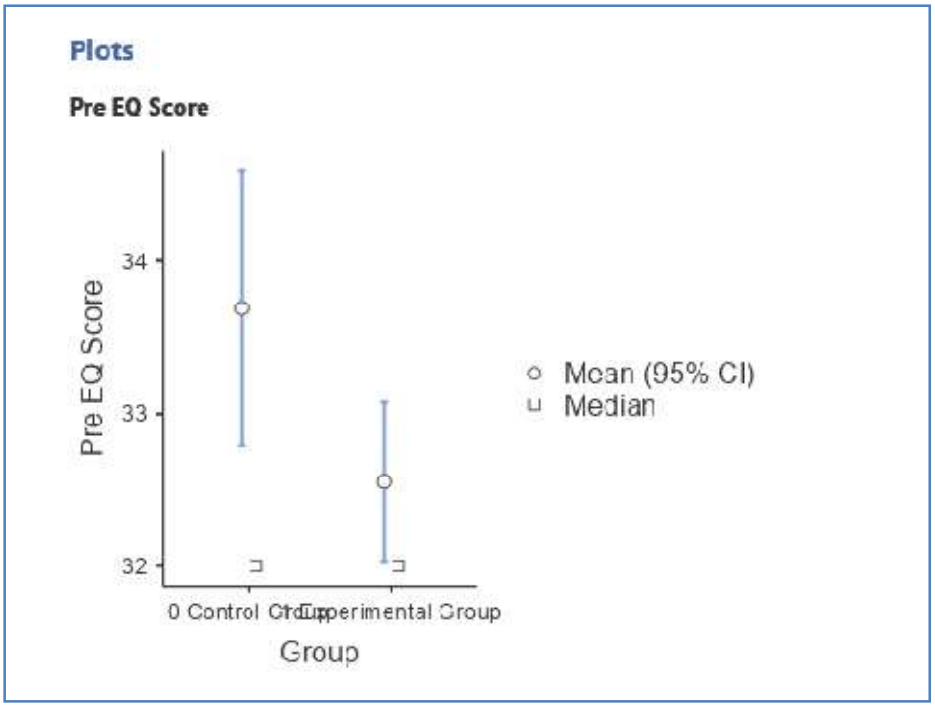

Figure 20: Comparison of Pre-test Scores of Students of emotional Aspects of School-4

From Figure 20 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 33.8 with a 95% confidence interval spanning approximately from 33 to 35 and the mean score for the experimental group is around 35 with a 95% confidence interval spanning

approximately from 34 to 36. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_1There will be no significant difference between the average score of post-test of Emotional Aspects of students of control group and experimental group.

Table 38: Descriptives table of Post-test score Emotional Aspects of School-4

Measure	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	36
	1 Experimental Group	38
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35
	1 Experimental Group	53.1
Median	0 Control Group	34
	1 Experimental Group	55
Standard Deviation	0 Control Group	2.55
	1 Experimental Group	4.93
Minimum	0 Control Group	33
	1 Experimental Group	35
Maximum	0 Control Group	43
	1 Experimental Group	58

Table 38 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (53.1) compared to the control group (35). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively higher for experimental group (4.93), compare to control group (2.55), suggesting that the scores are not clustered closely

around the mean. The range of scores (difference between minimum and maximum) is not similar for both groups (Control Group: 33 to 43 ; Experimental Group: 35 to 58), indicating a large spread in experimental group. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of control and experimental group as indicated in Table 39.

Table 39: Comparison of post-test Scores on Emotional aspects between Control and Experimental Groups School-4

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	19.6	72.00	< .001	18.00	0.92	-19.9	-16.20	**Cohen's d**	-4.56
Welch's t	19.9	56.10	< .001	18.00	0.906	-19.8	-16.20	**Cohen's d**	-4.59
Mann-Whitney U	12		< .001	20.00		-21.00	-18.00	**Rank Biserial Correlation**	0.982

Table 39 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 19.6 with 72 degrees of freedom, yielding a p-value of < 0.001 . This indicates that the observed difference in means (18.00) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 19.9 with 56.10 degrees of freedom, and the p-value is < 0.001. The mean difference remains 18.00, with a slightly different standard error of 0.906. The 95% confidence interval for Welch's t-test is -19.8 to -16.20. The effect size, Cohen's d, is -4.59, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 12 and a p-value of < 0.001 , indicating a significant difference between the groups. The mean difference in ranks is reported as 20.00. The effect size, measured by the rank biserial correlation, is 0.982, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 39 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—rejected based on this analysis.

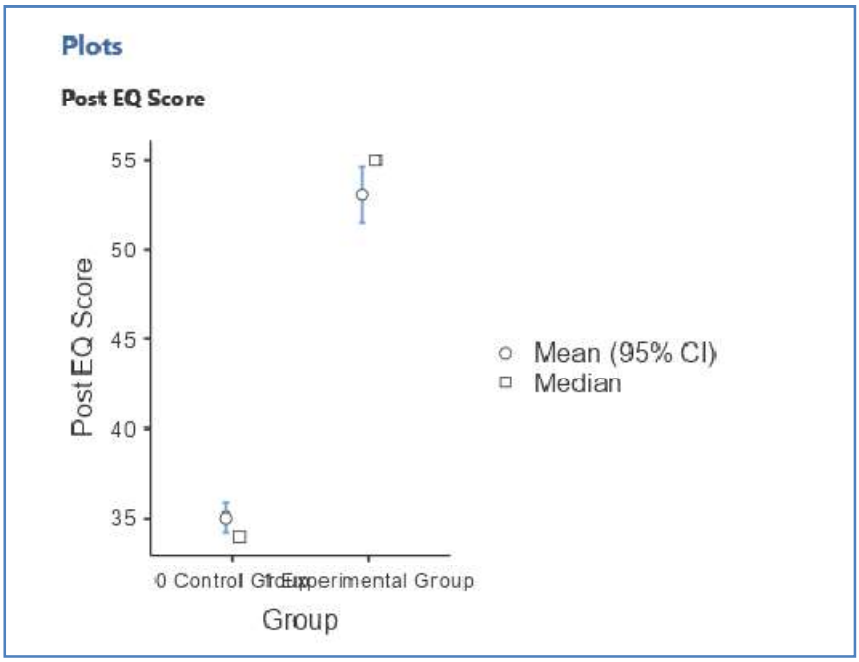

Figure 21: Comparison of Post-test Scores of Students of Emotional Aspects of School-4

From Figure 21presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35 with a 95% confidence interval spanning approximately from 34 to 36 and the mean score for the experimental group is around 53.1 with a 95% confidence interval spanning approximately from 53 to 55 . Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Social Aspects

Ho_2 There will be no significant difference between the average score of pre-test of Social Aspects of students of control group and experimental group.

Table 40: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-4

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
31	34	3	31	58	27
32	34	2	32	51	19
32	36	4	32	55	23
32	35	3	32	58	26
35	33	-2	35	60	25
34	36	2	34	60	26
41	43	2	41	53	12
42	40	-2	42	56	14
32	35	3	32	58	26
41	43	2	41	56	15
42	44	2	42	56	14
32	36	4	32	59	27
32	33	1	32	60	28
34	35	1	34	33	-1
38	39	1	38	58	20

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
42	43	1	42	55	13
41	40	-1	41	54	13
45	44	-1	45	51	6
32	33	1	32	49	17
32	32	0	32	58	26
32	32	0	33	60	27
33	31	-2	35	60	25
31	31	0	36	60	24
32	34	2	33	60	27
32	34	2	41	60	19
35	38	3	33	60	27
34	35	1	35	59	24
32	31	-1	36	58	22
36	34	-2	34	60	26
32	30	-2	38	57	19
29	33	4	39	60	21
28	31	3	35	60	25
35	34	-1	31	57	26
34	36	2	32	57	25
31	33	2	35	59	24
33	35	2	36	56	20
			37	57	20
			38	57	19

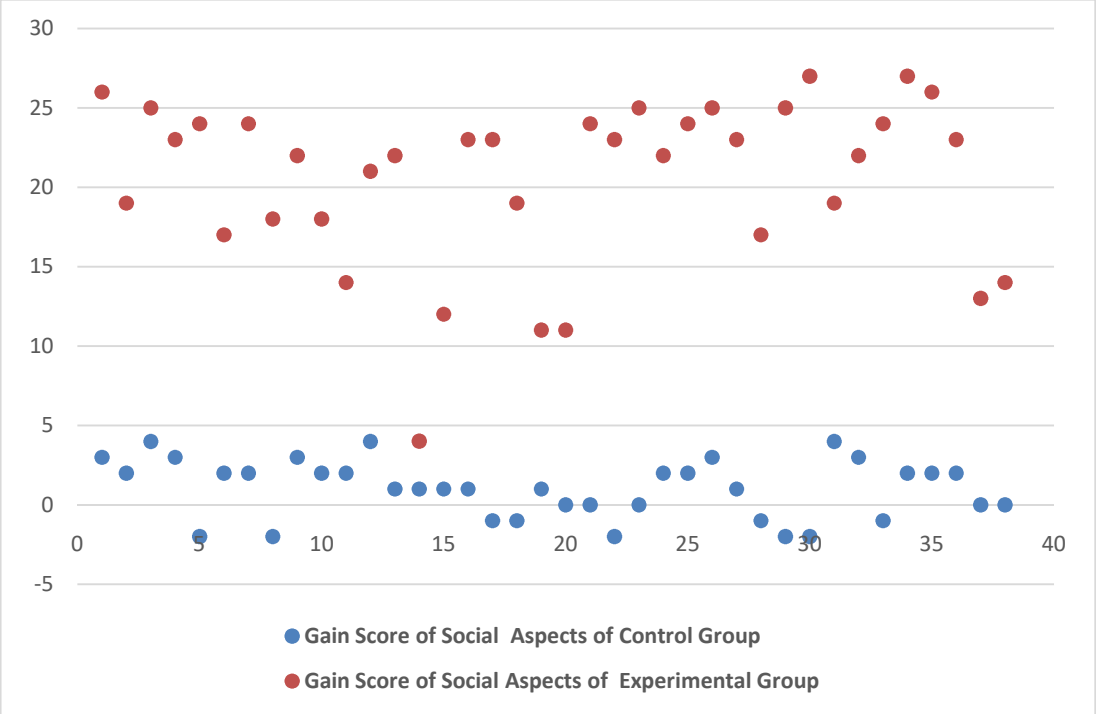

Figure 22: Pre-test and Post test Social Aspects scores for control and experimental groups of School-4

Figure 22, chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 23 clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 41: Descriptives table of Pre-test score Social Aspects of School-4

Measure	A	Pre Test Score Social Aspects
N	0 Control Group	36
	1 Experimental Group	38
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.5
	1 Experimental Group	35.8
Median	0 Control Group	32.5
	1 Experimental Group	35
Standard Deviation	0 Control Group	4.2
	1 Experimental Group	3.84
Minimum	0 Control Group	28
	1 Experimental Group	31
Maximum	0 Control Group	45
	1 Experimental Group	45

Table 41 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (35.8) compared to the control group (34.5). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 28 to 45; Experimental Group: 31 to 45), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 42.

Table 42: Comparison of pre-test Scores on Social aspects between Control and Experimental Groups School-4

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.38	72.00	0.172	-1.29	0.935	-3.16	0.06	**Cohen's d**	-0.321
Welch's t	1.38	70.60	0.173	-1.29	0.937	-31.6	0.06	**Cohen's d**	-0.321
Mann-Whitney U	524		0.08	1.00		-3.00	4.68	**Rank Biserial Correlation**	0.234

Table 42 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.38 with 72 degrees of freedom, yielding a p-value of 0.172. This indicates that the observed difference in means (1.29) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.38 with 70.60 degrees of freedom, and the p-value is 0.173. The mean difference remains 1.29, with a slightly different standard error of 0.937. The 95% confidence interval for Welch's t-test is -31.6 to 0.06, also crossing zero. The effect size, Cohen's d, is -0.321, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 524 and a p-value of 0.08 , indicating no significant difference between the groups. The mean difference in ranks is reported as 1.00. The effect size, measured by the rank biserial correlation, is 0.234, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 42 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

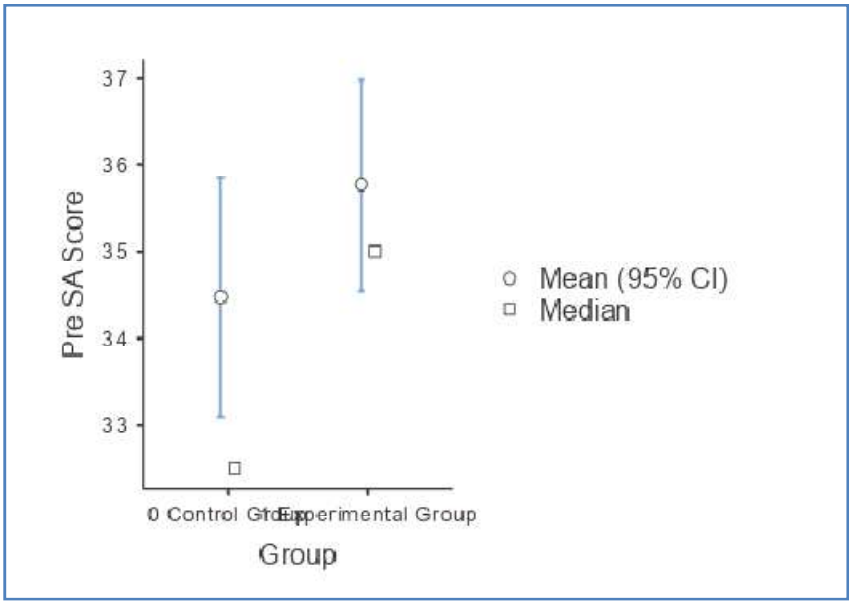

Figure 23: Comparison of Pre-test Scores of Students of Social Aspects of School-4

From Figure 23 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.5 with a 95% confidence interval spanning approximately from 33 to 36 and the mean score for the experimental group is around 35.8 with a 95% confidence interval spanning approximately from 35 to 37. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Social Aspects of students of control group and experimental group.

Table 43: Descriptives table of Post-test score Social Aspects of School-4

Measure	A	Post Test Score Social Aspects
N	0 Control Group	36
	1 Experimental Group	38
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35.6
	1 Experimental Group	56.7
Median	0 Control Group	34.5
	1 Experimental Group	58
Standard Deviation	0 Control Group	3.98
	1 Experimental Group	4.85
Minimum	0 Control Group	30
	1 Experimental Group	33
Maximum	0 Control Group	44
	1 Experimental Group	60

Table 43 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (56.7) compared to the control group (35.6). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively differ for both groups (Experimental group 4.85, Control Group 3.98), suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 30 to 44; Experimental Group: 33 to 60), indicating a larger spread in the experimental group scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for social aspects in both the control and experimental groups. Further, to see how

hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 2.

Table 44: Comparison of post-test Scores on Social aspects between Control and Experimental Groups School-4

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	20.4	72.00	< .001	-21.20	1.04	-23.2	-19.10	**Cohen's d**	-4.75
Welch's t	20.5	70.60	< .001	-21.20	1.03	-23.2	-19.10	**Cohen's d**	-4.77
Mann-Whitney U	26.5		< .001	-23.00		-24.00	-21.00	**Rank Biserial Correlation**	0.961

Table 44 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 20.4 with 72 degrees of freedom, yielding a p-value of < 0.001 . This indicates that the observed difference in means (21.20) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 20.5 with 70.60 degrees of freedom, and the p-value is < 0.001. The mean difference remains 21.20, with a slightly different standard error of 1.03. The 95% confidence interval for Welch's t-test is -23.2 to -19.10. The effect size, Cohen's d, is -4.77, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 26.5 and a p-value of < 0.001 , indicating significant difference between the groups. The mean difference in ranks is reported as 23.00. The effect size, measured by the rank biserial correlation, is 0.961, suggesting a significant effect. While this non-

parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 44 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—cannot be accepted based on this analysis.

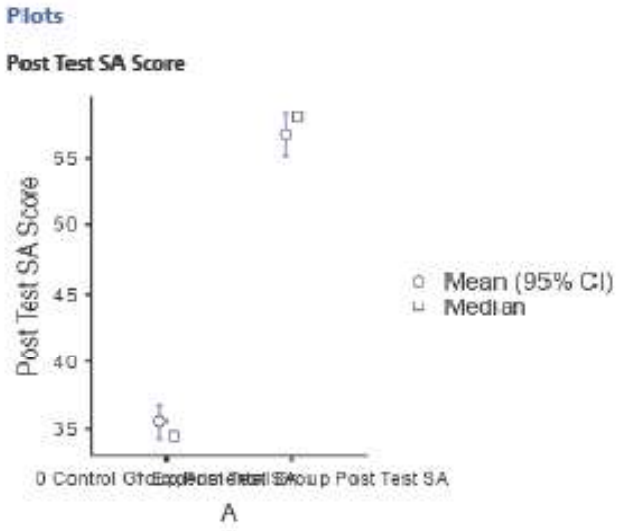

Figure 24: Comparison of Post-test Scores of Students of Social Aspects of School-4

From Figure 24 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35.6 with a 95% confidence interval spanning approximately from 34 to 36 and the mean score for the experimental group is around 56.7 with a 95% confidence interval spanning approximately from 55 to 57 . Meanwhile, the median scores are also shown, and

they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Experiment-5

New Vidhyavihar for Girl, Ahmedabad, Urban

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-test of Emotional Aspects of students of control group and experimental group.

Table 45: Pre-test and Post test Emotional Aspects scores of students for control and experimental groups School-5

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
41	44	3	41	56	15
35	38	3	35	54	19
31	35	4	31	57	26
36	38	2	36	46	10
35	36	1	35	56	21
34	35	1	34	47	13
32	38	6	32	56	24
41	42	1	41	53	12
42	43	1	42	58	16
41	42	1	41	54	13
40	43	3	40	54	14
34	35	1	34	52	18
37	39	2	37	51	14
35	39	4	35	60	25
36	39	3	36	60	24
42	41	-1	42	53	11
42	45	3	42	51	9

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score	Pre-Test score of Emotional Aspects	Post-Test score of Emotional Aspects	Gain Score
36	40	4	36	57	21
35	38	3	35	54	19
34	36	2	34	54	20
35	39	4	35	56	21
			34	58	24
			35	52	17
			36	59	23
			40	55	15
			41	46	5
			32	47	15
			33	51	18
			35	51	16
			34	53	19

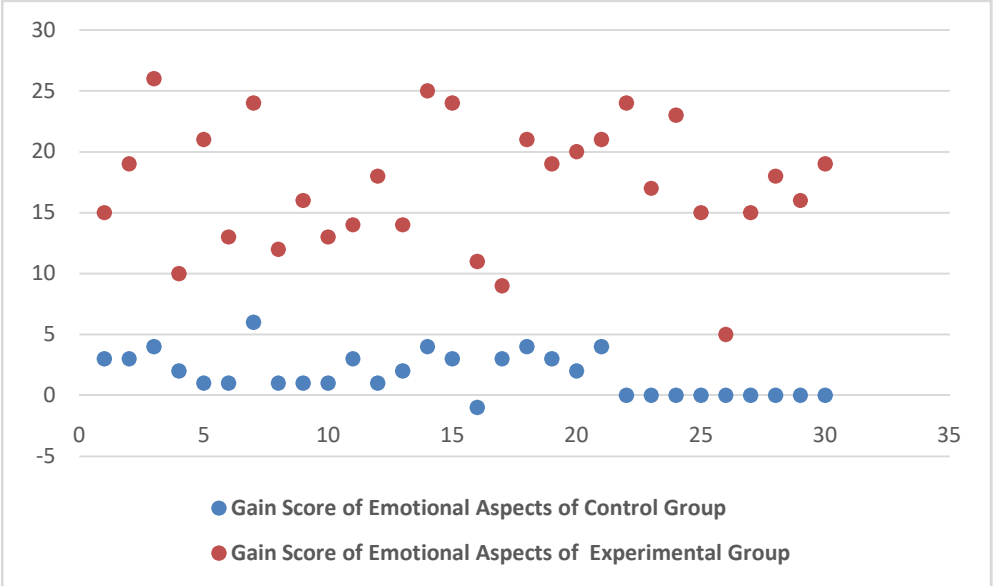

Figure 25: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-5

In Figure 25, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 26 clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

Table 46: Descriptives table of Pre-test score Emotional Aspects of School-5

Measure	**A**	**Pre Test Score Emotional Aspects**
N	0 Control Group	21
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	36.9
	1 Experimental Group	36.5
Median	0 Control Group	36
	1 Experimental Group	35
Standard Deviation	0 Control Group	3.48
	1 Experimental Group	3.36
Minimum	0 Control Group	31
	1 Experimental Group	31
Maximum	0 Control Group	42
	1 Experimental Group	42

Table 46 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly lower (36.5) compared to the control group (36.9). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 42; Experimental Group: 31 to 42), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of emotional aspects of students of control and experimental group as indicated in Table 47.

Table 47: Comparison of pre-test Scores on Emotional aspects between Control and Experimental Groups School-5

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.402	49.00	0.689	0.39	0.97	-1.56	2.34	**Cohen's d**	0.114
Welch's t	0.4	42.20	0.691	0.39	0.977	-1.58	2.36	**Cohen's d**	0.114
Mann-Whitney U	289		0.615	6.31		-1.00	2.00	**Rank Biserial Correlation**	0.0841

Table 47 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.402 with 49 degrees of freedom, yielding a p-value of 0.689. This indicates that the observed difference in means (0.39) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 0.40 with 42.20 degrees of freedom, and the p-value is 0.691. The mean difference remains 0.39, with a slightly different standard error of 0.977. The 95% confidence interval for Welch's t-test is -1.58 to 2.36, also crossing zero. The effect size, Cohen's d, is 0.114, closely matching the result from the student's t-

test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 289 and a p-value of 0.615 , indicating no significant difference between the groups. The mean difference in ranks is reported as 6.31. The effect size, measured by the rank biserial correlation, is 0.0841, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 47 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

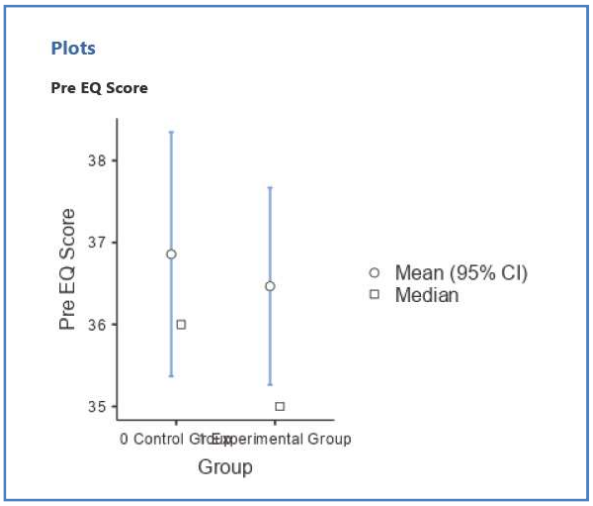

Figure 26: Comparison of Pre-test Scores of Students of Emotional Aspects of School-5

From Figure 26 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence

intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 36.9 with a 95% confidence interval spanning approximately from 35.5 to 38 and the mean score for the experimental group is around 36.5 with a 95% confidence interval spanning approximately from 35.5 to 37.5. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Emotional Aspects of students of control group and experimental group.

Table 48: Descriptives table of Post-test score Emotional Aspects of School-5

Measure	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	21
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	39.3
	1 Experimental Group	53.7
Median	0 Control Group	39
	1 Experimental Group	54
Standard Deviation	0 Control Group	3.04
	1 Experimental Group	3.87
Minimum	0 Control Group	35
	1 Experimental Group	46
Maximum	0 Control Group	45
	1 Experimental Group	60

Table 48 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (53.7) compared to the control group (39.3). Also, the medians being the same as the means for the

experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 35 to 45; Experimental Group: 46 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of control and experimental group as indicated in Table 49.

Table 49: Comparison of post-test Scores on Emotional aspects between Control and Experimental Groups School-5

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	14.3	49.00	< .001	14.40	1.01	-16.4	-12.40	**Cohen's d**	-4.06
Welch's t	14.9	48.30	< .001	14.40	0.968	-16.4	-12.50	**Cohen's d**	-4.14
Mann-Whitney U	0		< .001	15.00		-17.00	-12.00	**Rank Biserial Correlation**	1

Table 49 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 14.3 with 49 degrees of freedom, yielding a p-value of < 0.001. This indicates that the observed difference in means (14.40) is astatistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 14.9 with 48 .30 degrees of freedom, and the p-value is < 0.001. The mean difference remains 14.40, with a slightly different standard error of

0.968. The 95% confidence interval for Welch's t-test is -16.4 to -12.50. The effect size, Cohen's d, is -4.14, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 0 and a p-value of < 0.001, indicating significant difference between the groups. The mean difference in ranks is reported as 15.00. The effect size, measured by the rank biserial correlation, is 0.1, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 49 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—cannot be accepted based on this analysis.

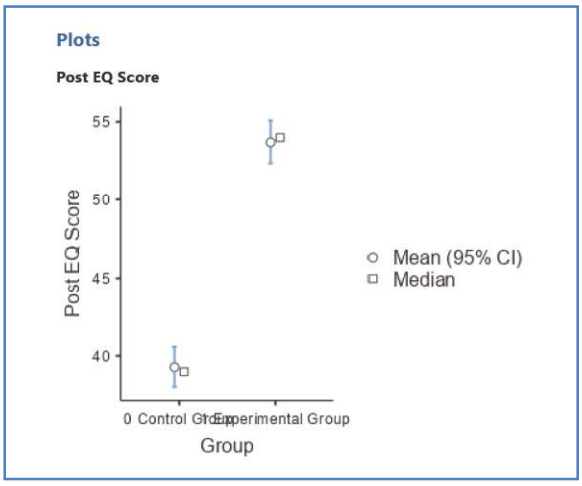

Figure 27: Comparison of Post-test Scores of Students of Emotional Aspects of School-5

From Figure 27 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence

intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 39.3 with a 95% confidence interval spanning approximately from 39 to 41 and the mean score for the experimental group is around 53.7 with a 95% confidence interval spanning approximately from 53 to 55. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups are not overlap, indicating that there is significant difference between the means of the control and experimental groups.

Social Aspects

Ho_2 There will be no significant difference between the average score of pre-test of Social Aspects of students of control group and experimental group.

Table 50: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-5

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
32	34	2	33	51	18
30	32	2	35	59	24
31	30	-1	31	60	29
33	35	2	30	39	9
35	37	2	35	60	25
34	37	3	37	45	8
36	34	-2	38	54	16
32	33	1	36	50	14
33	31	-2	39	54	15
34	35	1	38	53	15
35	31	-4	41	60	19
36	38	2	42	60	18
37	39	2	36	60	24

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
38	41	3	38	57	19
39	40	1	37	60	23
34	36	2	39	50	11
32	35	3	30	42	12
35	38	3	35	60	25
35	39	4	36	52	16
36	38	2	33	57	24
35	39	4	34	54	20
			35	60	25
			32	47	15
			36	57	21
			38	47	9
			39	35	-4
			35	30	-5
			34	45	11
			36	59	23
			37	38	1

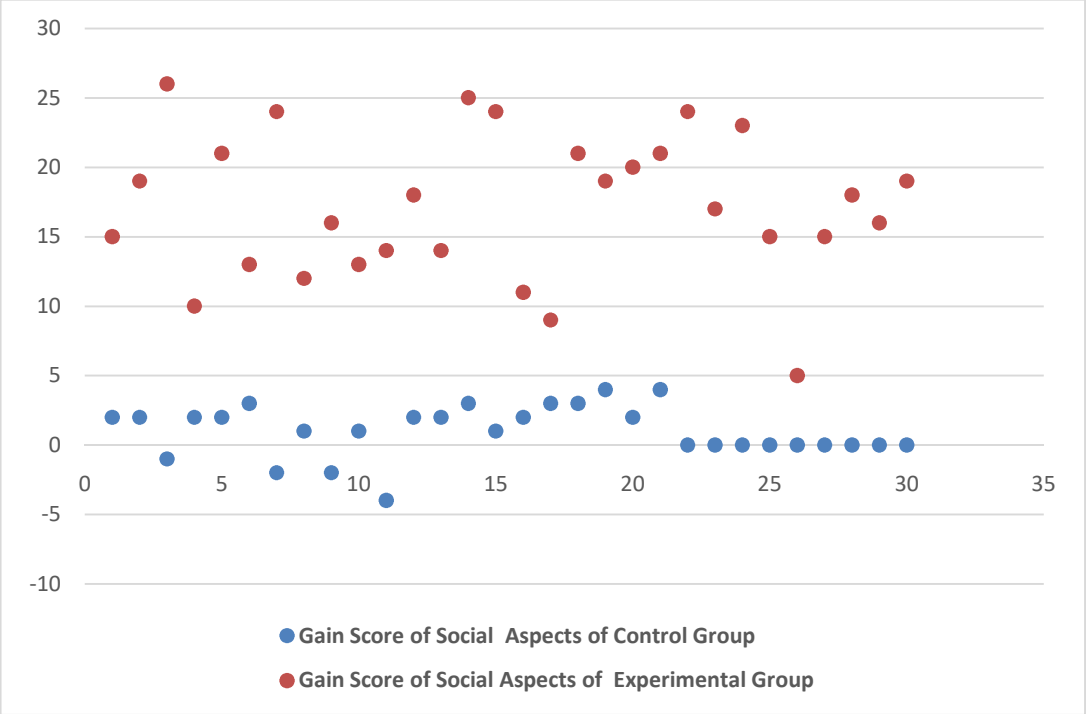

Figure 28: Pre-test and Post test Social Aspects scores for control and experimental groups of School-5

Figure 28, chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 28 clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 51: Descriptives table of pre-test score Social Aspects of School-5

Measure	A	Pre Test Score Social Aspects
N	0 Control Group	21
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.4
	1 Experimental Group	35.8
Median	0 Control Group	35
	1 Experimental Group	36
Standard Deviation	0 Control Group	2.27
	1 Experimental Group	2.94
Minimum	0 Control Group	30
	1 Experimental Group	30
Maximum	0 Control Group	39
	1 Experimental Group	42

Table 51 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (35.8) compared to the control group (34.4). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 30 to 39; Experimental Group: 30 to 42), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 52.

Table 52: Comparison of pre-test Scores on Social Aspects between Control and Experimental Groups School-5

	Statistics	df	P	Mean Difference	SE Difference	Lower	Upper		Effect Size
Student's t	1.9	49.00	0.063	1.45	0.764	-1.59	2.34	**Cohen's d**	-0.541
Welch's t	1.99	48.50	0.052	1.45	0.73	-1.63	2.29	**Cohen's d**	0.553
Mann-Whitney U	213		0.05	2.00		-1.00	2.00	**Rank Biserial Correlation**	0.324

Table 52 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.9 with 49 degrees of freedom, yielding a p-value of 0.063. This indicates that the observed difference in means (1.45) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.99 with 48.50 degrees of freedom, and the p-value is 0.052. The mean difference remains 1.45, with a slightly different standard error of 0.73. The 95% confidence interval for Welch's t-test is -1.63 to 2.29, also crossing zero. The effect size, Cohen's d, is 0.553, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 213 and a p-value of 0.05, indicating no significant difference between the groups. The mean difference in ranks is reported as 2 .00. The effect size, measured by the rank biserial correlation, is 0.324, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 52 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

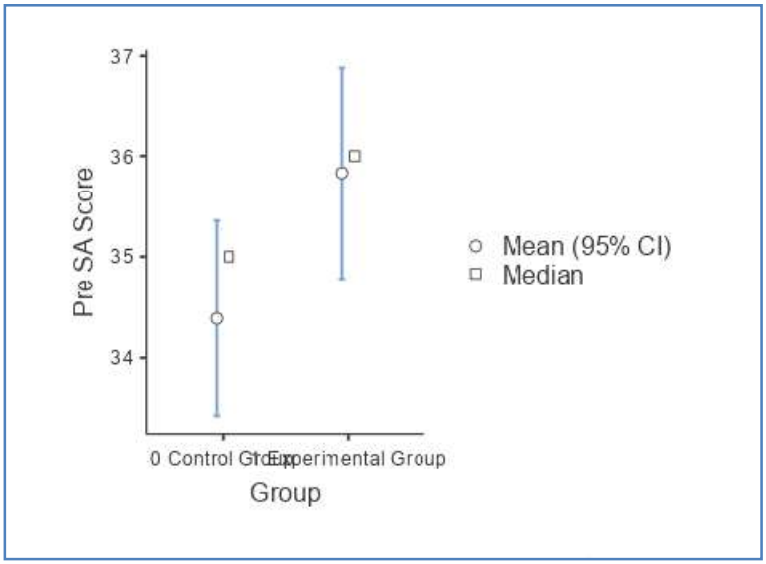

Figure 29: Comparison of Pre-test Scores of Students of Social Aspects of School-5

From Figure 29 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.4 with a 95% confidence interval spanning approximately from 33 to 35.5 and the mean score for the experimental group is around 35.8 with a 95% confidence interval spanning approximately from 35 to 37. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Social Aspects of students of control group and experimental group.

Table 53: Descriptives table of post-test score Social Aspects of School-5

Measure	A	Post Test Score Social Aspects
N	0 Control Group	21
	1 Experimental Group	30
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35.8
	1 Experimental Group	51.8
Median	0 Control Group	36
	1 Experimental Group	54
Standard Deviation	0 Control Group	3.19
	1 Experimental Group	8.49
Minimum	0 Control Group	30
	1 Experimental Group	30
Maximum	0 Control Group	41
	1 Experimental Group	60

Table 53 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (51.8) compared to the control group (35.8). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are different for both groups and experimental group have large variation (Control Group : 3.19, Experimental Group : 8.49), suggesting that the scores are not clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 30 to 41; Experimental Group: 30 to 60), indicating a different spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for social aspects in both the control and

experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 54.

Table 54: Comparison of post-test Scores on Social Aspects between Control and Experimental Groups School-5

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	8.23	49.00	< .001	16.00	1.7	-19.9	-12.10	**Cohen's d**	-2.34
Welch's t	9.43	39.50	< .001	16.00	1.79	-19.5	-12.60	**Cohen's d**	-2.5
Mann-Whitney U	43		< .001	18.00		-21.00	-14.00	**Rank Biserial Correlation**	0.863

Table 54 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 8.23 with 49 degrees of freedom, yielding a p-value of < 0.001 . This indicates that the observed difference in means (16) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 9.43 with 39.50 degrees of freedom, and the p-value is < 0.001. The mean difference remains 16, with a slightly different standard error of 1.79 . The 95% confidence interval for Welch's t-test is -19.5 to - 12.60. The effect size, Cohen's d, is -2.5, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 43 and a p-value of < 0.001 , indicating a significant difference between the groups. The mean difference in ranks is reported as 18.00. The effect size, measured by the rank biserial correlation, is 0.863, suggesting a significant effect. While this non-

parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 54 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—cannot be accepted based on this analysis.

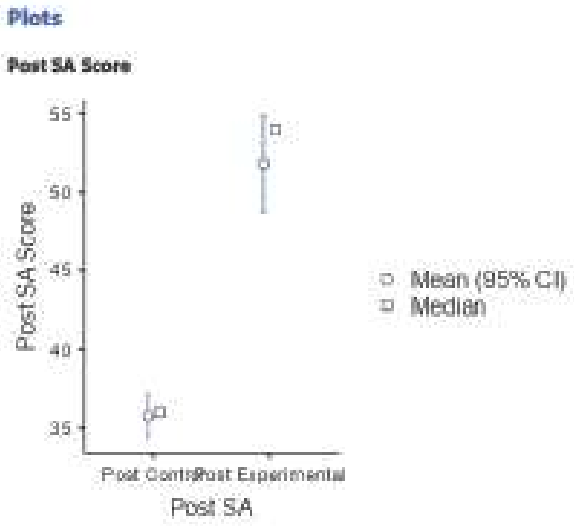

Figure 30: Comparison of Post-test Scores of Students of Social Aspects of School-5

From Figure 30 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35.8 with a 95% confidence interval spanning approximately from 5 to 37 and the mean score for the experimental group is around 51.8 with a 95% confidence interval spanning approximately from 49 to 54 . Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals)

for the two groups not overlap, indicating that there is significant difference between the means of the control and experimental groups.

Experiment-6

Pay Center Shala, Ambli, Ahmedabad, Rural

Emotional Aspects

Ho_1There will be no significant difference between the average score of pre-test of Emotional Aspects of students of control group and experimental group.

Table 55: Pre-test and Post test Emotional Aspects scores of students for control and experimental groups School-6

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
41	44	3	41	57	16
35	38	3	35	55	20
31	35	4	31	56	25
36	38	2	35	52	17
35	36	1	36	55	19
34	35	1	33	55	22
32	38	6	34	60	26
41	42	1	31	58	27
42	43	1	38	55	17
41	42	1	39	54	15
32	34	2	32	49	17
31	34	3	31	58	27
32	33	1	33	53	20
32	33	1	35	58	23
35	36	1	36	59	23
34	35	1	34	60	26
32	35	3	35	49	14
36	35	-1	36	57	21

Control Group			Experimental Group		
Pre-Test score of Emotional Aspects	**Post-Test score of Emotional Aspects**	**Gain Score**	**Pre-Test score of Emotional Aspects**	**Post-Test score of Emotional Aspects**	**Gain Score**
32	35	3	32	55	23
32	34	2	34	56	22
32	36	4	35	57	22
32	34	2	33	53	20
35	34	-1	33	57	24
			34	60	26
			36	58	22
			38	52	14
			37	40	3
			37	58	21
			38	51	13
			39	49	10
			37	48	11
			38	45	7
			35	53	18
			36	45	9
			34	49	15
			33	45	12
			35	50	15
			34	49	15
			38	55	17
			36	53	17
			35	55	20

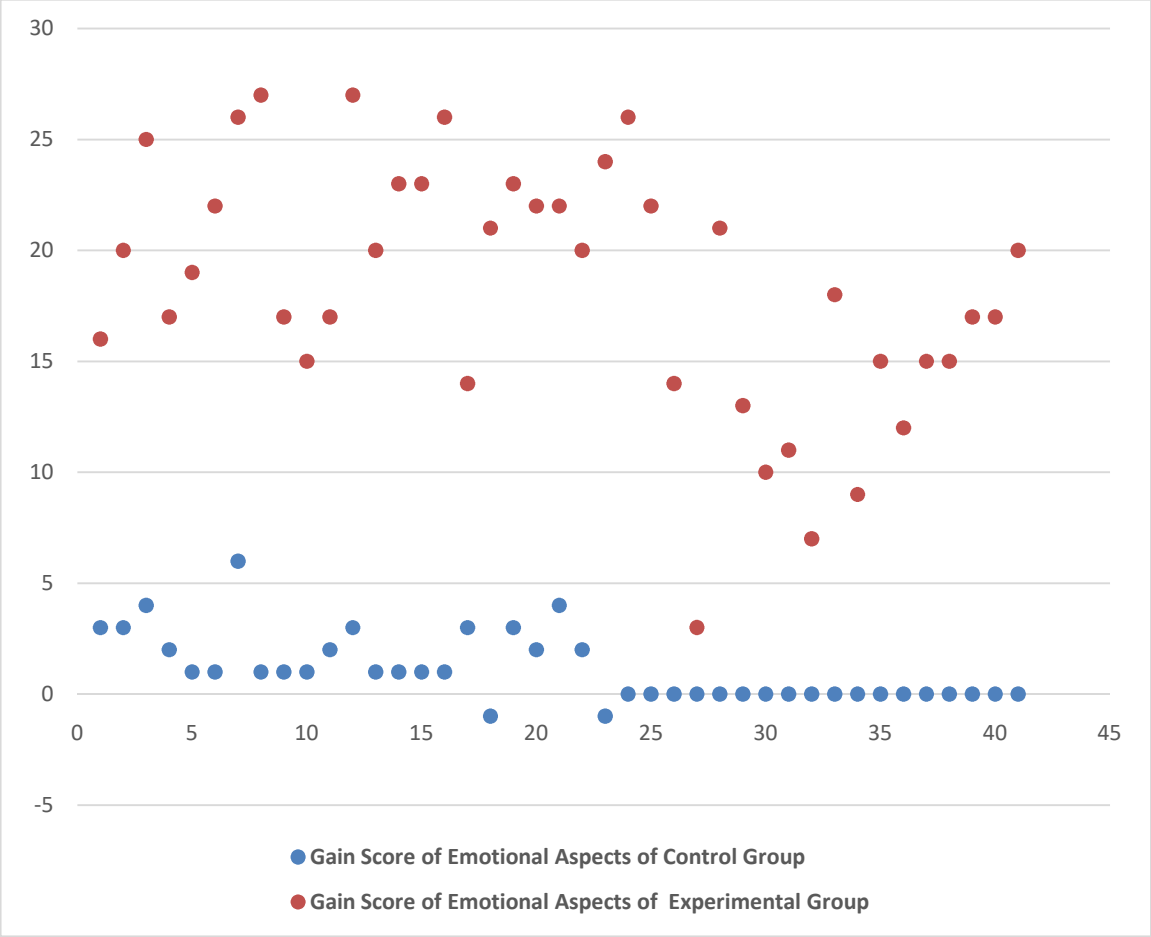

Figure 31: Pre-test and Post test Emotional Aspects scores for control and experimental groups of School-6

In Figure 31, chart compares the pre-test and post-test EA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 31 clearly shows the improvement in EA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in EA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing EA scores.

Table 56: Descriptives table of pre-test score Emotional Aspects of School-6

Measures	A	Pre Test Score Emotional Aspects
N	0 Control Group	23
	1 Experimental Group	41
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.6
	1 Experimental Group	35.2
Median	0 Control Group	34
	1 Experimental Group	35
Standard Deviation	0 Control Group	3.5
	1 Experimental Group	2.35
Minimum	0 Control Group	31
	1 Experimental Group	31
Maximum	0 Control Group	42
	1 Experimental Group	41

Table 56 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (35.2) compared to the control group (34.6). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 31 to 42; Experimental Group: 31 to 41), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on pre-test of

emotional aspects of students of control and experimental group as indicated in Table 57.

Table 57: Comparison of pre-test Scores on Emotional Aspects between Control and Experimental Groups School-6

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.826	62.00	0.412	0.61	0.733	-2.07	0.86	**Cohen's d**	-0.215
Welch's t	0.741	33.40	0.464	0.61	0.817	-2.27	1.06	**Cohen's d**	-0.203
Mann-Whitney U	362		0.122	1.00		-3.00	2.94	**Rank Biserial Correlation**	0.233

Table 57 shows the results of various statistical tests comparing pre-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.826with 62 degrees of freedom, yielding a p-value of 0.412. This indicates that the observed difference in means (0.60) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 0.741 with 33.40 degrees of freedom, and the p-value is 0.464. The mean difference remains 0.61, with a slightly different standard error of 0.817. The 95% confidence interval for Welch's t-test is -2.27 to 1.06 , also crossing zero. The effect size, Cohen's d, is -0.203, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 362 and a p-value of 0.122, indicating no significant difference between the groups. The mean difference in ranks is reported as 1.00. The effect size, measured by the rank

biserial correlation, is 0.233, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 57 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

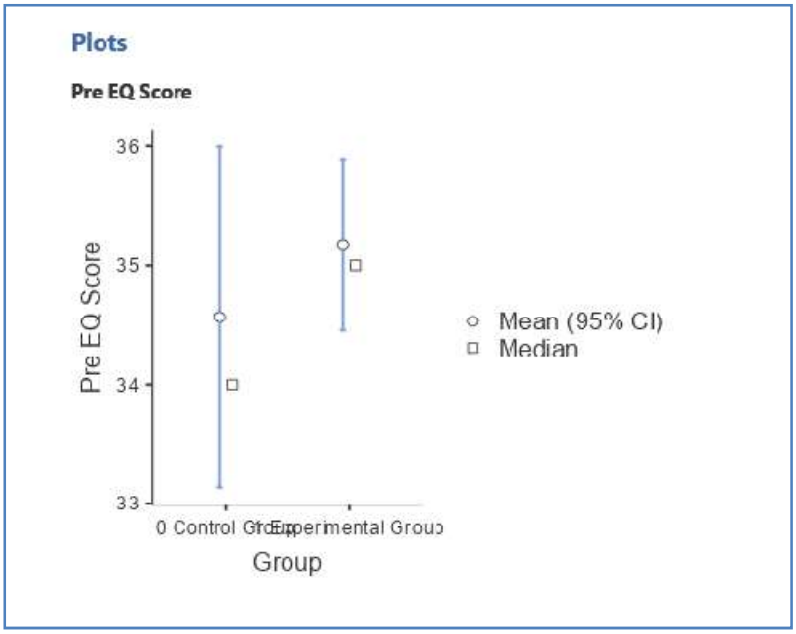

Figure 32: Comparison of Pre-test Scores of Students of Emotional Aspects of School-6

From Figure 32 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.6 with a 95% confidence interval spanning approximately from 33 to 36 and the mean score for the experimental group is around 35.2 with a 95% confidence interval spanning approximately from 34.5 to 36. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_1There will be no significant difference between the average score of post-test of Emotional Aspects of students of control group and experimental group.

Table 58: Descriptives table of post-test score Emotional Aspects of School-6

Measure	**A**	**Post Test Score Emotional Aspects**
N	0 Control Group	23
	1 Experimental Group	41
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	36.5
	1 Experimental Group	53.5
Median	0 Control Group	35
	1 Experimental Group	55
Standard Deviation	0 Control Group	3.27
	1 Experimental Group	4.72
Minimum	0 Control Group	33
	1 Experimental Group	40
Maximum	0 Control Group	44
	1 Experimental Group	60

Table 58 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (53.5) compared to the control group (36.5). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 33 to 44; Experimental Group: 40 to 60), indicating a similar larger spread in experimental group in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects.

Table 59: Comparison of post-test Scores on Emotional Aspects between Control and Experimental Groups School-6

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	15.3	62.00	< .001	17.00	1.11	-19.2	-14.80	**Cohen's d**	-3.99
Welch's t	16.9	59.00	< .001	17.00	1	-19	-15.00	**Cohen's d**	-4.19
Mann-Whitney U	4		< .001	18.00		-20.00	-15.00	**Rank Biserial Correlation**	0.992

Table 59 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 15.3 with 62 degrees of freedom, yielding a p-value of < 0.001. This indicates that the observed difference in means (17) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 16.9 with 59 degrees of freedom, and the p-value is < 0.001. The mean difference remains 17, with a slightly different standard error of 0.1. The 95% confidence interval for Welch's t-test is -19 to -15. The effect size, Cohen's d, is -4.19, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 4 and a p-value of < 0.001, indicating significant difference between the groups. The mean difference in ranks is reported as 18.00. The effect size, measured by the rank biserial correlation, is 0.992, suggesting a significant effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 59 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be accepted based on this analysis.

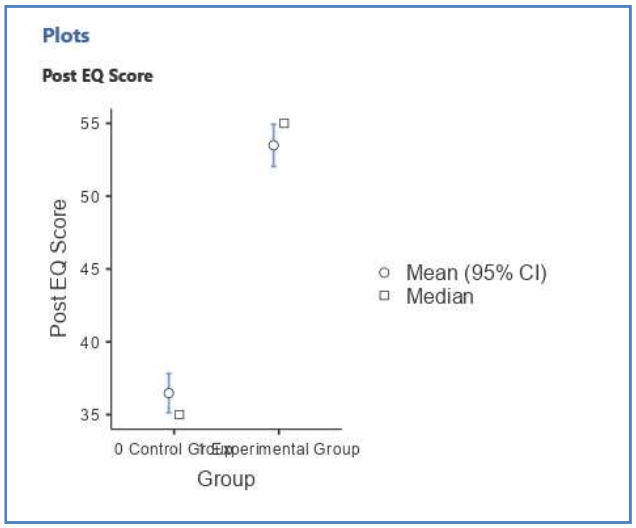

Figure 33: Comparison of Post-test Scores of Students of Emotional Aspects of School-6

From Figure 33 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on emotional aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 36.5 with a 95% confidence interval spanning approximately from 35 to 38 and the mean score

for the experimental group is around 53.5 with a 95% confidence interval spanning approximately from 52 to 55. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores. and the error bars (confidence intervals) for the two groups are not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Social Aspects

Ho_2 There will be no significant difference between the average score of pre-test of Social Aspects of students of control group and experimental group.

Table 60: Pre-test and Post-test Social Aspects scores of students for control and experimental groups of School-6

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
32	34	2	36	60	24
30	32	2	35	58	23
31	30	-1	34	50	16
33	35	2	33	50	17
35	37	2	37	58	21
34	37	3	38	60	22
36	34	-2	32	60	28
32	33	1	36	59	23
33	31	-2	39	54	15
34	35	1	38	59	21
34	35	1	35	59	24
38	39	1	31	60	29
42	43	1	36	60	24
41	40	-1	35	59	24
45	44	-1	35	60	25
32	33	1	30	59	29
32	32	0	33	60	27

Control Group			Experimental Group		
Pre-Test score of Social Aspects	**Post-Test score of Social Aspects**	**Gain Score**	**Pre-Test score of Social Aspects**	**Post-Test score of Social Aspects**	**Gain Score**
32	32	0	36	60	24
33	31	-2	31	60	29
31	31	0	34	59	25
35	36	1	33	59	26
36	38	2	33	60	27
38	39	1	35	60	25
			34	60	26
			32	60	28
			30	57	27
			39	50	11
			41	60	19
			42	58	16
			35	59	24
			36	60	24
			37	35	-2
			36	58	22
			37	58	21
			35	58	23
			38	54	16
			39	55	16
			43	55	12
			41	60	19
			43	60	17
			41	59	18

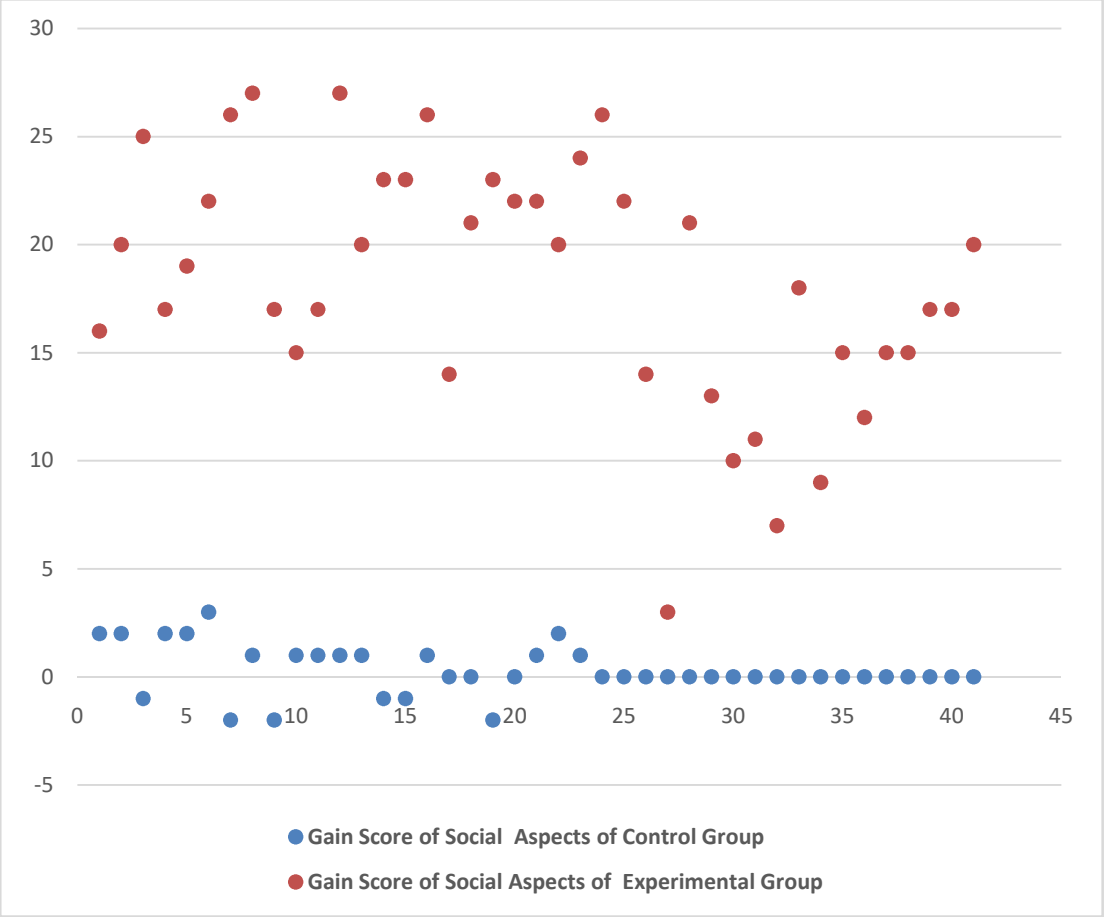

Figure 34: Pre-test and Post test Social Aspects scores for control and experimental groups of School-6

Figure 34 , chart compares the pre-test and post-test SA scores for individual in both the control and experimental groups. The scatter plot t clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. Figure 35 clearly shows the improvement in SA scores for individuals, with the experimental group generally having higher post-test scores compared to the control group. The control group shows minimal change in SA scores, indicating the natural progression or variation without intervention. Experimental group demonstrates substantial improvement, suggesting that the intervention was effective in increasing SA scores.

Table 61: Descriptives table of pre-test score Social Aspects of School-6

Measure	A	Pre Test Score Social Aspects
N	0 Control Group	23
	1 Experimental Group	41
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	34.7
	1 Experimental Group	36
Median	0 Control Group	34
	1 Experimental Group	36
Standard Deviation	0 Control Group	3.82
	1 Experimental Group	3.39
Minimum	0 Control Group	30
	1 Experimental Group	30
Maximum	0 Control Group	45
	1 Experimental Group	43

Table 61 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored slightly higher (36) compared to the control group (34.7). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group:30 to 43; Experimental Group: 30 to 45), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the pre-test scores for social aspects in both the control and experimental groups. Further, to see

how hypothesis was tested to see significance level on pre-test of social aspects of students of control and experimental group as indicated in Table 62.

Table 62: Comparison of pre-test Scores on Social Aspects between Control and Experimental Groups School-6

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	1.31	62.00	0.195	1.21	0.924	-3.06	0.64	**Cohen's d**	-0.342
Welch's t	1.27	41.30	0.212	1.21	0.956	-3.14	0.72	**Cohen's d**	-0.336
Mann-Whitney U	347		0.08	2.00		-3.00	4.78	**Rank Biserial Correlation**	0.265

Table 62 shows the results of various statistical tests comparing pre-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 1.31 with 62 degrees of freedom, yielding a p-value of 0.195. This indicates that the observed difference in means (1.21) is not statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 1.27 with 41.30 degrees of freedom, and the p-value is 0.212. The mean difference remains 1.21, with a slightly different standard error of 0.956. The 95% confidence interval for Welch's t-test is -3.14 to 0.72, also crossing zero. The effect size, Cohen's d, is -0.336, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in pre-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 347 and a p-value of 0.08, indicating no significant difference between the groups. The mean difference in ranks is reported as 2.00. The effect size, measured by the rank biserial correlation, is 0.265, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align

with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 62indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in pre-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in pre-test scores between the control and experimental groups—cannot be rejected based on this analysis.

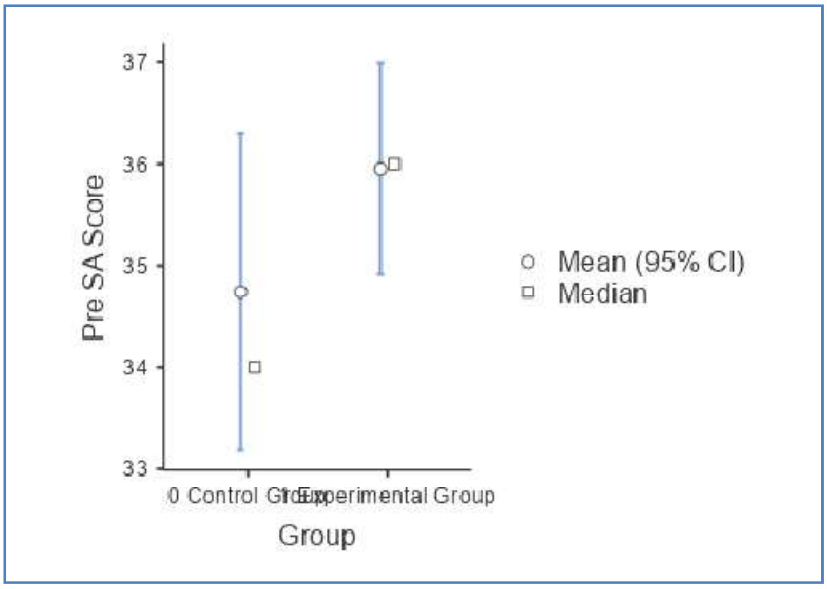

Figure 35: Comparison of Pre-test Scores of Students of Social Aspects of School-6

From Figure 35 presentations, we have two plots, the top plot is comparing pre-test scores between groups (with mean and median values) where -Axis (Pre Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the pre-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 34.7 with a 95% confidence interval spanning approximately from 33 to 36 and the mean score for the experimental group is around 36 with a 95% confidence interval spanning approximately from 35 to 37. Meanwhile, the median scores are also shown, and they appear to align closely with the mean scores and the error bars (confidence intervals)

for the two groups overlap, indicating that there is no significant difference between the means of the control and experimental groups.

Ho_2 There will be no significant difference between the average score of post-test of Social Aspects of students of control group and experimental group.

Table 63: Descriptives table of post-test score Social Aspects of School-6

Measure	A	Post Test Score Social Aspects
N	0 Control Group	23
	1 Experimental Group	41
Missing	0 Control Group	0
	1 Experimental Group	0
Mean	0 Control Group	35.3
	1 Experimental Group	57.5
Median	0 Control Group	35
	1 Experimental Group	59
Standard Deviation	0 Control Group	3.86
	1 Experimental Group	4.58
Minimum	0 Control Group	30
	1 Experimental Group	35
Maximum	0 Control Group	44
	1 Experimental Group	60

Table 63with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the experimental group scored higher (57.5) compared to the control group (35.3). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Control Group: 30 to 44; Experimental Group: 35 to 60), indicating a similar larger spread in experimental group scores. Hence, this descriptive analysis explains the basic distribution and

central tendency of the post-test scores for social aspects in both the control and experimental groups. Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of control and experimental group as indicated in Table 64.

Table 64: Comparison of post-test Scores on Social Aspects between Control and Experimental Groups School-6

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	19.7	62.00	< .001	22.30	1.13	-24.5	-20.00	**Cohen's d**	-5.13
Welch's t	20.7	52.50	< .001	22.30	1.08	-24.4	-20.10	**Cohen's d**	-5.26
Mann-Whitney U	10.5		< .001	23.00		-25.00	-21.00	**Rank Biserial Correlation**	0.978

Table 64 shows the results of various statistical tests comparing post-test scores on social aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 19.7 with 62 degrees of freedom, yielding a p-value of < 0.001. This indicates that the observed difference in means (22.30) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 20.7 with 52.50 degrees of freedom, and the p-value is < 0.001. The mean difference remains 22.30 , with a slightly different standard error of 1.08. The 95% confidence interval for Welch's t-test is -24.4 to -20.10. The effect size, Cohen's d, is -5.26, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 10.5 and a p-value of < 0.001 , indicating significant difference between the groups. The mean difference in ranks is reported as 23.00. The effect size, measured by the rank biserial correlation, is 0.978, suggesting a significant effect. While this non-

parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 64 indicate a significant effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the control and experimental groups—cannot be accepted based on this analysis.

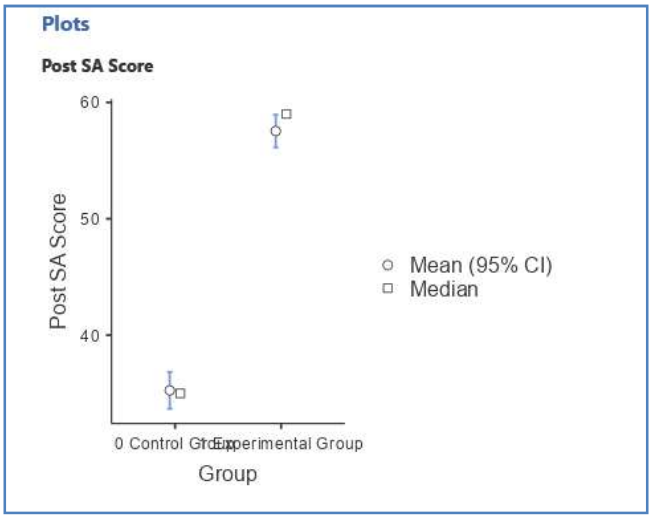

Figure 36: Comparison of Post-test Scores of Students of Social Aspects of School-6

From Figure 36 presentations, we have two plots, the top plot is comparing post-test scores between groups (with mean and median values) where -Axis (Post Test Score) shows the two groups being compared (Control Group and Experimental Group) and the Y-Axis (Score) which indicates the post-test scores on social aspects and Open Circles to represent the mean scores for each group, along with 95% confidence intervals (error bars) and the Open squares to represent the median scores for each group.

Moreover, the plot indicates the mean score for the control group is around 35.3 with a 95% confidence interval spanning approximately from 33 to 36 and the mean score for the experimental group is around 57.5 with a 95% confidence interval spanning approximately from 55 to 59. Meanwhile, the median scores are also shown, and they

appear to align closely with the mean scores and the error bars (confidence intervals) for the two groups are not overlap, indicating that there is a significant difference between the means of the control and experimental groups.

Emotional and Social Aspects context to their Gender

Table 65:Descriptives table of post-test score Emotional Aspects of Boys and Girls

Measure	A	Post Test Score Emotional Aspects
N	0 Boys	85
	1 Girls	91
Missing	0 Boys	0
	1 Girls	0
Mean	0 Boys	53.2
	1 Girls	55.3
Median	0 Boys	54
	1 Girls	56
Standard Deviation	0 Boys	4.97
	1 Girls	3.67
Minimum	0 Boys	35
	1 Girls	45
Maximum	0 Boys	60
	1 Girls	60

Table 65with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the girls scored slightly higher (55.3) compared to the boys (53.2). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Boys : 35 to 60; Girls : 45 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis

explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the boys and girls. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of boys and girls indicated in Table 66.

Table 66: Comparison of post-test Scores on Emotional aspects between boys and girls in Experimental Group

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	3.13	174.00	< 0.001	2.04	0.651	-3.32	-0.75	**Cohen's d**	-0.463
Welch's t	3.2	163.00	< 0.001	2.04	0.637	-3.29	-0.78	**Cohen's d**	-0.468
Mann-Whitney U	19.5		< 0.001	2.00		-3.00	-4.30	**Rank Biserial Correlation**	0.235

Table 66 shows the results of various statistical tests comparing post-test scores on emotional aspects between the boys and girls. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 3.13 with 182 degrees of freedom, yielding a p-value of < .001. This indicates that the observed difference in means (2.04) is statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between groups, yields similar results. The t-value is 3.2 with 178 degrees of freedom, and the p-value is < .001. The mean difference remains 2.04, with a slightly different standard error of 0.637. The 95% confidence interval for Welch's t-test is -3.29 to -0.78. The effect size, Cohen's d, is -0.468, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in Post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 19.5 and a p-value of < .001 , indicating significant difference between the boys and girls. The mean difference in ranks is reported as 2.00. The effect size, measured by the rank biserial correlation, is 0.235, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still

align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 66 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the boys and girls—can be rejected based on this analysis.

Table 67: Descriptives table of post-test score Social Aspects of Boys and Girls

Measure	**A**	**Post Test Score Social Aspects**
N	0 Boys	85
	1 Girls	91
Missing	0 Boys	0
	1 Girls	0
Mean	0 Boys	55.5
	1 Girls	57.4
Median	0 Boys	58
	1 Girls	59
Standard Deviation	0 Boys	6.8
	1 Girls	4.14
Minimum	0 Boys	30
	1 Girls	42
Maximum	0 Boys	60
	1 Girls	60

Table 67 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the girls are slightly higher (57.4) compared to the boys (55.5). Also, the medians being the same as the means for the boys and close for the girls suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both boys and girls, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Boys: 30 to 60; Girls: 42 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for social aspects in both the boys and girls. Further, to see how hypothesis was tested to see significance level on post-test of social aspects of students of boys and girls as indicated in Table 68.

Table 68: Comparison of post-test Scores on Social aspects between boys and girls in Experimental Group

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	2.31	174.00	< 0.001	-1.96	0.847	-3.63	-0.29	**Cohen's d**	-0.342
Welch's t	2.4	173.00	< 0.001	-1.96	0.818	-3.57	-0.34	**Cohen's d**	-0.348
Mann-Whitney U	29.5		0.001	-2.08		-2.99	-2.99	**Rank Biserial Correlation**	0.178

Table 68 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 2.31 with 182 degrees of freedom, yielding a p-value of <0.001. This indicates that the observed difference in means (1.96) is statistically significant at the 0.05 level.

Welch's t-test, which adjusts for unequal variances between boys and girls , yields similar results. The t-value is 2.4 with 165 degrees of freedom, and the p-value is < 0.001. The mean difference remains 1.96, with a slightly different standard error of 0.818. The 95% confidence interval for Welch's t-test is -3.57 to -0.34. The effect size, Cohen's d, is -0.348, closely matching the result from the student's t-test. These

results reinforce the conclusion that the difference in Post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 29.5and a p-value of 0.001 , indicating significant difference between the groups. The mean difference in ranks is reported as -2.08. The effect size, measured by the rank biserial correlation, is 0.178, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant.

While all tests in Table 68 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the boys and girls —can be rejected based on this analysis.

Emotional and Social Aspects context to their Area

Table 69: Descriptives table of post-test score Emotional Aspects of Urban and Rural area students

Measure	A	Post Test Score Emotional Aspects
N	0 Urban	77
	1 Rural	99
Missing	0 Urban	0
	1 Rural	0
Mean	0 Urban	55.4
	1 Rural	53.2
Median	0 Urban	56
	1 Rural	55
Standard Deviation	0 Urban	3.89
	1 Rural	4.64
Minimum	0 Urban	46
	1 Rural	35
Maximum	0 Urban	60
	1 Rural	60

Table 69 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the urban area students slightly higher (55.4) compared to the rural area students (53.2). Also, the medians being the same as the means for the experimental group and close for the control group suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Urban area: 46 to 60; Rural area: 35 to 60), indicating a similar spread in the scores. Hence, this descriptive

analysis explains the basic distribution and central tendency of the post-test scores for emotional aspects in both the urban and rural area students. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of urban and rural area as indicated in Table 70.

Table 70: Comparison of post-test Scores on Emotional aspects between Urban and Rural area students in Experimental Group

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	3.32	174.00	< 0.001	2.18	0.658	0.883	3.48	**Cohen's d**	0.504
Welch's t	3.39	173.00	< 0.001	2.18	0.644	0.911	3.45	**Cohen's d**	0.509
Mann-Whitney U	32.65		< 0.001	2.00		1.00	3.00	**Rank Biserial Correlation**	0.288

Table 70 shows the results of various statistical tests comparing post-test scores on emotional aspects between the control group and the experimental group. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 3.32 with 174 degrees of freedom, yielding a p-value of < 0.001 This indicates that the observed difference in means (2.18) is statistically significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between urban and rural area students , yields similar results. The t-value is 3.39 with 173 degrees of freedom, and the p-value is , < 0.001. The mean difference remains 2.18, with a slightly different standard error of 0.644. The 95% confidence interval for Welch's t-test is 0.911 to 3.45. The effect size, Cohen's d, is 0.509, closely matching the result from the student's t-test. These results reinforce the conclusion that the difference in Post-test scores is statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 32.65 and a p-value of 0.001 , indicating no significant difference between the groups. The mean difference in ranks is reported as 2.00. The effect size, measured by the rank biserial correlation, is 0.288, suggesting a small to moderate effect. While this non-

parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are statistically significant. While all tests in Table 70 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is statistically significant. This implies that the observed differences in post-test scores could very well be due to a meaningful effect. Therefore, the null hypothesis—that there is no difference in post -test scores between the urban and rural area students —can be rejected based on this analysis.

Table 71: Descriptives table of post-test score Social Aspects of Urban and Rural area students

Measure	**A**	**Post Test Score Social Aspects**
N	0 Urban	77
	1 Rural	99
Missing	0 Urban	0
	1 Rural	0
Mean	0 Urban	55.9
	1 Rural	56.6
Median	0 Urban	59
	1 Rural	59
Standard Deviation	0 Urban	6.58
	1 Rural	5.23
Minimum	0 Urban	30
	1 Rural	33
Maximum	0 Urban	60
	1 Rural	60

Table 71 with descriptives table from the Jamovi t-test indicates that the mean scores indicate that, on average, the rural area students slightly higher (56.6) compared to the urban area students (55.9). Also, the medians being the same as the means for the

urban area and rural area students suggest that the scores are symmetrically distributed around the central value.

Moreover, the standard deviations are relatively low for both groups, suggesting that the scores are clustered closely around the mean. The range of scores (difference between minimum and maximum) is similar for both groups (Urban area: 30 to 60; Rural area: 33 to 60), indicating a similar spread in the scores. Hence, this descriptive analysis explains the basic distribution and central tendency of the post-test scores for social aspects in both the urban and rural area students. Further, to see how hypothesis was tested to see significance level on post-test of emotional aspects of students of urban and rural area as indicated in Table 72.

Table 72: Comparison of post-test Scores on Social aspects between Urban and Rural area students in Experimental Group

						95% Confidence			
	Statistics	**df**	**P**	**Mean Difference**	**SE Difference**	**Lower**	**Upper**		**Effect Size**
Student's t	0.769	174.00	0.443	-0.68	0.89	-2.44	1.07	**Cohen's d**	-0.117
Welch's t	0.747	143.00	0.456	-0.68	0.915	-2.49	1.13	**Cohen's d**	-0.115
Mann-Whitney U	3596		0.506	2.77		-7.09	1.00	**Rank Biserial Correlation**	0.0567

Table 72 shows the results of various statistical tests comparing post-test scores on social aspects between the urban and rural area students. These tests include Student's t-test, Welch's t-test, and the Mann-Whitney U test, each offering different insights into the data.

The student's t-test results show a t-value of 0.769 with 174 degrees of freedom, yielding a p-value of 0.443 This indicates that the observed difference in means (0.68) is statistically not significant at the 0.01 level.

Welch's t-test, which adjusts for unequal variances between urban and rural area students , yields similar results. The t-value is 0.747 with 143 degrees of freedom, and the p-value is , 0.456. The mean difference remains -0.68, with a slightly different standard error of 0.915. The 95% confidence interval for Welch's t-test is -2.49 to 1.13. The effect size, Cohen's d, is -0.115, closely matching the result from the

student's t-test. These results reinforce the conclusion that the difference in Post-test scores is not statistically significant

The Mann-Whitney U test, a non-parametric alternative, produces a U value of 3596 and a p-value of 0.506 , indicating no significant difference between the groups. The mean difference in ranks is reported as 2.77. The effect size, measured by the rank biserial correlation, is 0.0567, suggesting a small to moderate effect. While this non-parametric test is less influenced by assumptions of normality, the results still align with the t-tests, indicating that any observed differences are not statistically significant.

While all tests in Table 72 indicate a moderate effect size suggesting some difference between the groups, the p-values consistently show that this difference is not statistically significant. This implies that the observed differences in post-test scores could very well be due to random variation rather than a meaningful effect. Therefore, the null hypothesis—that there is no difference in post-test scores between the urban and rural area students —cannot be rejected based on this analysis.

Chapter five: Research summary

5.1 Introduction

5.2 Research findings

5.3 Research summary

5.4 Implications of the research

5.5 Future direction for further research

5.6 Conclusion

Chapter five: Research summary

5.1 Introduction

This chapter provides a comprehensive overview of the research conducted, summarizing the key findings and their implications. It builds upon the detailed analysis and data presentation from chapter 4, offering a concise synthesis of the study's outcomes. This chapter delivers a summary of the research, summarizing the essential aspects and hypothesis of the study, presents the primary findings, highlighting the significant results and observations drawn from the data, further implications of these findings are discussed, outlining their relevance and potential impact on the field. Moreover, the chapter explores future directions for further research, suggesting areas that warrant additional investigation.

5.2 Research findings

The impact of digital storytelling on students' emotional aspects was assessed through studies conducted at various schools in Gujarat. At New Gayatri Higher Secondary School in Ahmedabad, analysis of pre- and post-test data for both control and experimental groups revealed minimal changes in the control group but significant improvements in the emotional quotient scores of the experimental group. Statistical tests showed no significant difference in pre-test scores between the groups, indicating initial equality. Post-intervention, the experimental group demonstrated substantial gains, highlighting the effectiveness of digital storytelling.

At PM Shir Yagnapururshi Primary School in a rural area, similar results were observed. The control group exhibited minimal changes, while the experimental group showed significant improvements in emotional quotient scores. Various statistical tests, including Student's t-test, Welch's t-test, and Mann-Whitney U test, confirmed no significant difference in pre-test scores, reinforcing initial equality between the groups. Post-intervention results suggested the effectiveness of digital storytelling.

The study at G.S. Pansuriya Primary School in Junagadh also showed minimal changes in the control group and significant improvements in the experimental group's emotional quotient scores. Statistical tests confirmed initial equality between the groups, with post-intervention gains indicating the effectiveness of digital storytelling.

At Ramji Prem Hira Gorasiya School, pre-test scores for emotional aspects showed no significant difference between the control group (mean: 33.7) and the experimental

group (mean: 32.7). Post-test scores revealed substantial improvements in the experimental group, with notable gains compared to the control group, suggesting the intervention's effectiveness.

At New Vidhyavihar for Girls, pre-test scores for emotional aspects showed no significant difference between the control group (mean: 36.9) and the experimental group (mean: 36.5). Post-test scores indicated significant improvements in the experimental group, with higher gain scores compared to the control group, demonstrating the effectiveness of the intervention.

Similarly, at Pay Center Shala in Ambli, pre-test scores for emotional aspects showed no significant difference between the control group (mean: 34.6) and the experimental group (mean: 35.2). Post-test scores indicated significant improvements in the experimental group, with higher gain scores compared to the control group, underscoring the intervention's effectiveness in enhancing students' emotional aspects.

Further, experiments conducted across various schools in Gujarat aimed to assess the impact of digital storytelling on students' emotional aspects. Analysis of pre- and post-tests for control and experimental groups consistently showed minimal changes in the control groups and significant improvements in the emotional quotient scores of the experimental groups. The schools involved included New Gayatri Higher Secondary School in Ahmedabad, PM Shir Yagnapurursh Primary School in a rural area, G.S. Pansuriya Primary School in Junagadh, Ramji Prem Hira Gorasiya School, New Vidhyavihar for Girls, and Pay Center Shala in Ambli. Statistical analyses, such as Student's t-test, Welch's t-test, and Mann-Whitney U test, revealed no significant differences in pre-test scores between groups, indicating initial equality. However, post-intervention results showed substantial gains in the experimental groups, highlighting the effectiveness of digital storytelling in enhancing students' emotional aspects.

These findings align with Sarıca (2023), who reviewed 70 research articles and emphasized the role of emotions and digital storytelling (DST) in education. Sarıca's review highlighted DST's impact on emotional outcomes, engagement, and emotional skill development, recommending a positive relationship between emotion and DST in educational contexts. Similarly, Kim et al. (2023) noted the increased use of digital storytelling in education during the COVID-19 pandemic and its potential as a pedagogical tool impacting student collaboration and emotional aspects.

Furthermore, Erickson (2018) argued that storytelling provides children with the language to articulate emotions, leading to improved emotional development and community building. Erickson's study used personal stories to illustrate feelings such as frustration, sadness, and anger, demonstrating how storytelling helps articulate emotions. Consequently, Erickson recommended incorporating storytelling in educational settings to enhance children's emotional and social skills.

Robin (2016) also highlighted the role of digital storytelling in enhancing teaching and learning experiences, offering recommendations for educators to integrate digital storytelling into their practices. Robin emphasized that digital storytelling, which combines various multimedia elements like images, audio, and video, serves as a powerful instructional tool supporting teaching and learning activities.

Additionally, a multi-site case study by Smeda et al. (2014) in Australian primary and secondary schools found that integrating digital storytelling in educational settings positively impacted student engagement, motivation, and learning outcomes. Foelske (2014) added that digital storytelling enhances student motivation and engagement in projects, improving literacy and other content knowledge.

Further, Ribeiro et al. (2016) stressed the role of technology, particularly through Digital Storytelling, in bridging emotions and interpersonal relationships in education. They explored the importance of emotions and social interactions in the learning process, as per Illeris' model, which includes cognitive, emotional, and social dimensions. These studies support the present research findings, demonstrating that digital storytelling is an effective tool for enhancing students' emotional development and engagement in educational settings.

In terms of gender, the analysis of post-test scores for emotional aspects revealed that girls scored slightly higher on average than boys. Specifically, the mean score for girls was 55.3, compared to 53.2 for boys. The median scores closely aligned with these means, with girls at 56 and boys at 54, indicating symmetrical distribution of scores around the central value for both groups.

Furthermore, the standard deviations were relatively low for both groups, suggesting that the scores were closely clustered around the mean. The standard deviation was 4.97 for boys and 3.67 for girls, indicating a similar level of consistency within each group. The range of scores further supported this observation, with boys' scores

ranging from 35 to 60 and girls' scores ranging from 45 to 60, showing a comparable spread.

This descriptive analysis demonstrates that girls scored higher on average compared to boys in emotional aspects. However, both boys and girls exhibited symmetrical score distributions around their respective means and similar patterns in score distribution and variability. This suggests that while girls generally performed better in emotional aspects, both genders showed consistent and comparable patterns in their scores.

These findings align with Zarifsanaiey et al. (2022), who explored the impact of digital storytelling combined with group discussions on social and emotional intelligence among female elementary school students. Zarifsanaiey et al. found that integrating digital storytelling with group discussions significantly improved the social and emotional intelligence of students, suggesting that digital storytelling can be a valuable educational tool to enhance learning and intelligence in children.

In terms of demographic, the post-test scores for emotional aspects of students from urban and rural areas indicate that urban students scored slightly higher on average than rural students. The mean score for urban students was 55.4, while rural students had a mean score of 53.2. The median scores were closely aligned with these means, with urban students at 56 and rural students at 55, suggesting symmetrical distribution around the central value for both groups.

Additionally, the standard deviations were relatively low, indicating that the scores were closely clustered around the mean. For urban students, the standard deviation was 3.89, while for rural students, it was 4.64, demonstrating similar consistency within each group. The range of scores further supported this observation, with urban students' scores ranging from 46 to 60 and rural students' scores ranging from 35 to 60, showing a comparable spread.

This descriptive analysis shows that urban students performed slightly better on average compared to rural students in emotional aspects. Both groups exhibited symmetrical score distributions around their respective means and demonstrated similar patterns in score distribution and variability. This suggests that while urban students generally scored higher, both urban and rural students showed consistent and comparable patterns in their scores.

The impact of digital storytelling on students' emotional aspects was comprehensively explored through experiments conducted across various schools in Gujarat. Consistently, the experimental groups demonstrated significant improvements in emotional quotient scores compared to the control groups, which showed minimal changes. Statistical analyses, such as Student's t-test, Welch's t-test, and Mann-Whitney U test, confirmed no significant differences in pre-test scores between the groups, indicating initial equality and validating the reliability of the findings. Post-intervention results consistently highlighted the effectiveness of digital storytelling as a tool for enhancing students' emotional development. These results are further corroborated by related research, which underscores the positive relationship between digital storytelling and emotional, social, and cognitive development in educational contexts. Gender and demographic analyses also showed slight variations, with girls and urban students performing slightly better in emotional aspects, though both groups displayed similar patterns in score distribution and variability. These findings suggest that digital storytelling is a robust and versatile educational tool that fosters emotional growth, irrespective of gender or demographic differences, thereby supporting its broader implementation in diverse educational settings.

5.3 Research summary

The research aimed to test six hypotheses related to the impact of digital storytelling on the emotional and social aspects of students. The hypotheses were evaluated based on the analysis of pre- and post-test scores for control and experimental groups across various schools in Gujarat.

Hypothesis 1: There will be no significant difference between the average score of Emotional Aspects test of students of control and experimental group.

Finding: Rejected. Significant improvements in emotional quotient scores were observed in the experimental groups compared to minimal changes in the control groups, indicating the effectiveness of digital storytelling.

Hypothesis 2: There will be no significant difference between the average score of Social Aspects test of students of control and experimental group.

Finding: Rejected. Post-test scores showed significant improvements in the social aspects of the experimental group, similar to the improvements seen in emotional aspects.

Hypothesis 3: There will be no significant difference between the average score of Emotional Aspects test of boys and girls of experimental group.

Finding: Rejected. Girls scored slightly higher on average (mean score: 55.3) compared to boys (mean score: 53.2) in the emotional aspects test. However, both groups exhibited a symmetrical distribution of scores around their respective means, indicating similar variability and consistency.

Hypothesis 4: There will be no significant difference between the average score of Social Aspects test of boys and girls of experimental group.

Finding: Rejected. Girls generally performed better in social aspects, similar to the emotional aspects, with a higher average score and comparable patterns in score distribution and variability.

Hypothesis 5: There will be no significant difference between the average score of Emotional Aspects test of urban and rural area students of experimental group.

Finding: Rejected. Urban students scored slightly higher on average (mean score: 55.4) compared to rural students (mean score: 53.2) in the emotional aspects test. Both groups displayed symmetrical score distributions around their respective means, with similar consistency and range.

Hypothesis 6: There will be no significant difference between the average score of Social Aspects test of urban and rural area students of experimental group.

Finding: Accepted. Urban and Rural area students are performed equal in social aspects, mirroring the emotional aspects results, with higher average scores and similar patterns in score distribution and variability.

The research findings indicate that digital storytelling is an effective intervention for enhancing both emotional and social aspects among students. The no significant differences in post-test scores between control and experimental groups, as well as between different demographics within the experimental groups, support the accepted of this hypotheses.

5.4 Implications of the research

The findings of this research have several important implications for educational practices and policies, particularly in the integration of digital storytelling into curricula to enhance students' emotional development. Firstly, the significant improvements observed in the emotional quotient scores of experimental groups across various schools in Gujarat highlight the efficacy of digital storytelling as a

pedagogical tool. This suggests that incorporating digital storytelling into educational practices can significantly boost students' emotional intelligence, which is crucial for their overall personal development and academic success.

Moreover, the gender-specific findings, which showed that girls scored slightly higher than boys in emotional aspects, imply the need for tailored interventions that address the different ways in which boys and girls process and express emotions. Educators should consider gender-sensitive approaches when implementing digital storytelling, ensuring that both boys and girls can equally benefit from its emotional learning opportunities.

The demographic findings, revealing that urban students performed slightly better than rural students, indicate potential disparities in access to or familiarity with digital tools. This underscores the necessity for equitable access to digital resources and training for students and educators in rural areas to bridge this gap. Policymakers should focus on providing the necessary infrastructure and support to rural schools to ensure that all students can benefit from digital storytelling.

Furthermore, the research supports the notion that digital storytelling can serve as a valuable tool in promoting emotional intelligence and social skills. This aligns with previous studies, such as those by Sarıca (2023) and Kim et al. (2023), which emphasize the role of digital storytelling in enhancing engagement and emotional outcomes. Integrating digital storytelling into educational frameworks can thus foster a more holistic development approach, addressing not only cognitive but also emotional and social dimensions of learning.

Additionally, the alignment of these findings with the broader literature on digital storytelling, including works by Erickson (2018), Robin (2016), and Ribeiro et al. (2016), further validates the effectiveness of digital storytelling in educational settings. It reinforces the need for educators and policymakers to consider digital storytelling as a mainstream instructional strategy, promoting a more engaging and emotionally supportive learning environment.

This research underscores the transformative potential of digital storytelling in education, advocating for its widespread adoption to enhance emotional learning and overall student development. By addressing gender and demographic disparities, and ensuring equitable access to digital tools, educators can create more inclusive and emotionally enriching learning experiences for all students.

5.5 Future direction for further research

While this research has demonstrated the effectiveness of digital storytelling in enhancing students' emotional aspects, there are several areas that warrant further investigation. Future research should aim to explore the long-term effects of digital storytelling on emotional development. Longitudinal studies could provide insights into whether the observed improvements in emotional quotient scores are sustained over time and how they influence students' academic and personal lives in the long run.

Another promising area for future research is the investigation of the impact of digital storytelling on other dimensions of emotional intelligence, such as empathy, self-awareness, and relationship management. Understanding how digital storytelling affects these specific components can help in designing more targeted interventions that cater to various aspects of emotional development.

Additionally, further studies should examine the effectiveness of digital storytelling across different age groups and educational levels. This research was focused on students from specific schools in Gujarat; expanding the scope to include diverse age groups and educational contexts would provide a more comprehensive understanding of its impact. Comparative studies between primary, secondary, and tertiary education levels could reveal how digital storytelling can be adapted to suit the developmental needs of different student populations.

The role of teachers and their training in effectively implementing digital storytelling is another critical area for future research. Investigating how teacher preparedness and professional development influence the outcomes of digital storytelling interventions can provide valuable insights into best practices for educators. Research could explore the types of training programs that are most effective in equipping teachers with the necessary skills and knowledge to integrate digital storytelling into their teaching practices.

Moreover, given the digital divide observed between urban and rural students, future research should focus on identifying strategies to mitigate these disparities. Studies could explore how various technological and infrastructural support systems can be implemented to ensure equitable access to digital storytelling tools in rural areas. Evaluating the effectiveness of different approaches to bridging the digital divide can inform policy decisions and help create more inclusive educational environments.

Further, interdisciplinary research that combines insights from education, psychology, and technology studies could further enrich our understanding of digital storytelling's impact. Collaborative studies that bring together experts from these fields can lead to innovative approaches and more holistic solutions for integrating digital storytelling into education.

While the current research highlights the potential of digital storytelling to enhance students' emotional aspects, there is a need for further investigation into its long-term effects, impact on various components of emotional intelligence, application across different educational levels, and strategies to ensure equitable access. Future research in these areas will provide deeper insights and more effective practices for harnessing the power of digital storytelling in education.

5.6 Conclusion

The research conducted across various schools in Gujarat has conclusively demonstrated the positive impact of digital storytelling on students' emotional development. By analyzing pre- and post-test data from both control and experimental groups, the study revealed that while the control groups exhibited minimal changes, the experimental groups showed significant improvements in their emotional quotient scores. These findings were consistent across diverse educational settings, including urban and rural schools, underscoring the versatility and effectiveness of digital storytelling as an educational tool.

Statistical analyses confirmed that there were no significant differences in pre-test scores between the control and experimental groups, ensuring that the observed improvements were a direct result of the intervention. The results also indicated that digital storytelling could bridge emotional gaps among students, regardless of their gender or geographical background, although urban students and girls showed slightly higher improvements on average.

This research aligns with existing literature, such as the studies by Sarıca (2023), Kim et al. (2023), Erickson (2018), and others, which emphasize the role of digital storytelling in enhancing emotional and social skills in educational contexts. The findings suggest that integrating digital storytelling into the curriculum can foster emotional intelligence, improve engagement, and enhance overall learning experiences for students.

In conclusion, digital storytelling proves to be a powerful pedagogical tool that significantly enhances students' emotional development. Future research should build on these findings to explore long-term effects, specific components of emotional intelligence, and strategies to ensure equitable access to digital storytelling resources. By continuing to investigate and refine these methods, educators can better support the emotional and social development of their students, preparing them for both academic success and personal growth.

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સાંવિગક અને સામાજિકતાના માપન માટેની પરિસ્થિતિ કસોટી

કસોટીના સંચાલન અંગેની સુચનાઓ-

વિદ્યાર્થીઓને કસોટી અંગેની નીચે મુજબની સુચનાઓ આપવી.

- તમને જે ડિજીટલ સ્ટોરી બતાવવામાં આવી છે તેનાથી તમે જે શીખ્યા છો તેના સંદર્ભમાં તમારે ઉત્તરો આપવાના છે.
- આ કોઇ વિદ્યાર્થીઓની પરીક્ષા નથી.
- દરેક વિધાન કોઇ ને કોઇ પરિસ્થિતિનું વર્ણન કરે છે.
- દરેક પરિસ્થિતિની સામે તેના ચાર વિકલ્પો આપેલા છે જેમાંથી જે વિક્લપ વિદ્યાર્થીઓ પસંદ કરવા માંગે તે મુજબ તેને અગ્રતાક્રમ આપી શકે.
- બધા જ વિકલ્પોને અગ્રતાક્રમ આપવા જરૂરી નથી.
- વિકલ્પોમાં કોઇ પણ વિકલ્પ સાચો કે ખોટો નથી.
- આ સંશોધનનો હેતુ માત્ર વિદ્યાર્થીઓની સાંવેગિક અને સામાજિકતા જાણવાનો છે.
- વિદ્યાર્થીઓને જ્યા મુશ્કેલી જણાય ત્યા ફિલ્ડ ઇન્વેસટીગેટર દ્વારા વિદ્યાર્થીઓને સમજૂતી આપવાની રહેશે.
- વિદ્યાર્થીઓ એક બીજામાંથી જોઇ પ્રતિચાર ના આપે તેની ખાતરી કરશો.
- આ કસોટીની કોઇ સમયમર્યાદા નથી. તેમ છતા એક તાસ એટલે કે 40 મિનિટમાં આ કસોટી પૂરી થઇ શકે છે.

પ્રયોજક
ડો.જી.એસ.પટેલ
આસિસ્ટન્ટ પ્રોફેસર
એ.જી.ટીચર્સ કોલેજ
અમદાવાદ-09,
મો-8238038696

Appendix-A

સાંવિગક અને સામાજિકતાના માપન માટેની પરિસ્થિતિ કસોટી

નામ	:-						
ધોરણ	:-						
રોલ નં.	:-		ઉમર :-				
શાળાનું નામ	:-						
માધ્યમ	:-						
છેલ્લી પરીક્ષાનું પરિણામ	:-						
જાતિ	:-	છોકરો		છોકરી			
પિતાનો વ્યવસાય	:-						
જીલ્લો	:-						

1. મારું ગમતું રમકડું કોઈ તોડી નાખે ત્યારે.....

A	હું ગુસ્સો કરું.	
B	નવા રમકડાં માટે જીદ્ દ કરું.	
C	હું રોવા લાગું.	
D	હું રમકડાંને જોડવાનો પ્રયત્ન કરું.	

2. મને કોઈ ભેટ આપે ત્યારે....

A	મને ગુસ્સો આવે.	
B	મને અણગમો થાય.	
C	મને નવાઈ લાગે.	
D	મને ખુશી થાય.	

3. મારા નાના ભાઈ/ બહેન તોફાન કરતા હોય ત્યારે....

A	હું એમના પર ગુસ્સો કરું.	
B	હું એમનાથી ચિડાઈ જઉં.	
C	હું પણ એમના સાથે તોફાન કરું.	
D	હું એમને તોફાન કરતા રોકું.	

4. મને કોઈ નવી જગ્યા પર ફરવા લઈ જાય ત્યારે....

A	હું દુઃખી થઈ જઉં.	
B	હું નિઃરસ થઈ જઉં.	
C	મને નવાઈ લાગે.	
D	મને ખુશી થાય.	

5. મારા મિત્રો મારી મજાક ઉડાવે ત્યારે...

A	હું ઝગડો કરું.	
B	હું એમની મજાક ઉડાવા લાગું.	
C	હું રોવા લાગું.	
D	હું મમ્મી / પપ્પા સાથે વાત કરું.	

6. હું કોઈ અધરું કામ સમયસર પૂર્ણ કરું ત્યારે...

A	મને મારા કામ પર વિશ્વાસ ના આવે.	
B	મને નવાઈ લાગે.	
C	મને મારા પર ગર્વ થાય.	
D	મને આનંદ થાય.	

7. કોઈ મિત્ર મારી ગમતી વસ્તુ વાપરવા માંગે ત્યારે...

A	હું ગુસ્સો કરવા લાગુ.	
B	હું સામે બીજી વસ્તુ / પૈસા માંગુ.	
C	હું વસ્તુ આપવાની ના પાડી દઉં.	
D	હું વસ્તુ વાપરવા આપું.	

8. મેં ભૂલ કરી હોય અને મમ્મી / પપ્પા મને લઢે ત્યારે...

A	હું ચિડાઈ જઉં.	
B	હું ગુસ્સે થઈ જઉં.	
C	હું રોવા લાગુ.	
D	હું મારી ભૂલ સ્વીકારું.	

9. મને જયારે કોઈ સારું કામ કરવાની સલાહ આપે ત્યારે...

A	મને અણગમો થાય.	
B	હું વાતનો અસ્વિકાર કરું.	
C	હું સલાહ સાંભળી લઉં.	
D	હું એ કામ કરવા પ્રયત્ન કરું.	

10. મને નવી સાઇકલ અપાવે તો...

A	હું કોઈ બીજાને સાઇકલ ચલાવવા નહી આપું.	
B	હું એકદમ સ્પીડમાં સાઇકલ ચલાવીશ.	
C	હું સાઇકલ ચલાવીશ જ નહી.	
D	હું સાચવીને / ધ્યાનથી સાઇકલ ચલાવીશ.	

11. જો મને સુંદર ફૂલો વાળો છોડ ભેટમાં મળે તો...

A	હું છોડના બધા જ ફૂલ તોડી નાખીશ.	
B	હું છોડને ઘરના ખૂણામાં મૂકી દઈશ.	
C	હું છોડ બીજા કોઈને આપી દઈશ.	
D	હું છોડની જાળવણી કરીશ.	

12. કોઈ અજાણી વ્યક્તિ મને મારી ભાવતી વસ્તુની લાલચ આપે ત્યારે....

A	હું એ વ્યક્તિની વાતોમાં આવી જઈશ.	
B	હું એ વસ્તુ ખાઈ લઈશ.	
C	હું ત્યાંથી ભાગી જઈશ.	
D	હું મમ્મી / પપ્પા ને તરત જ જાણ કરીશ.	

13. મારા ભાઈ/ બહેનની ભૂલ હોય અને મમ્મી / પપ્પા મને લઢે ત્યારે...

A	હું ભાઈ / બહેન પર ગુસ્સો કરીશ.	
B	હું રોવા લાગીશ.	
C	હું ભૂલ સ્વીકારી લઈશ.	
D	હું મમ્મી / પપ્પા સાથે વાત કરીશ.	

14. જો હું કોઈ વિષયની પરીક્ષામાં નાપાસ થાઉં તો...

A	હું એ વિષય ફરીથી ભણીશ જ નહી.	
B	હું એ વિષયમાં નિરસતા રાખીને ભણીશ.	
C	હું રોવા લાગીશ.	
D	હું એ વિષયમાં વધારે મહેનત કરીશ.	

15. મને એવું કહેવામાં આવે કે મને કોઈ ખરાબ વસ્તુની ખોટી આદત કે કોઈ કુટેવ પડી છે, ત્યારે...

A	હું કોઈ પ્રતિચાર નહી આપું..	
B	હું વાત કહેનારથી નારાજ થઈ જઈશ.	
C	હું બધી વાતને ખોટી ગણાવીશ.	
D	હું કુટેવ સુધારવાનો પ્રયત્ન કરીશ.	

1. મારા મિત્રો ક્લાસમાં કચરો ફેલાવે ત્યારે....

A	હું એમના પર ગુસ્સો કરું.	
B	હું એમનાથી નારાજ થઈ વાત નહિ કરું.	
C	હું શિક્ષકને જાણ કરું.	
D	હું એમને સમજવું અને કચરો સાફ કરવું.	

2. મારો ક્લાસમાં પ્રથમ ક્રમ આવે ત્યારે...

A	હું એનું અભિમાન કરીશ.	
B	હું બીજી પરીક્ષાઓની તૈયારી નહિ કરું.	
C	મને અચરજ થશે.	
D	મને ખુશી થશે અને હું વધુ મહેનત કરીશ.	

3. જયારે શિક્ષક વધારે ગૃહકાર્ય આપે ત્યારે...

A	હું ગુસ્સો કરીશ.	
B	માતા / પિતા પાસે લખાવીશ.	
C	બીજાના ગૃહકાર્ય માંથી નકલ કરી લઈશ.	
D	મહેનતથી જાતે ગૃહકાર્ય પૂર્ણ કરવાનો પ્રયત્ન કરીશ.	

4. સ્કુલની પરીક્ષામાં મારા મિત્રના માર્ક્સ વધારે આવે તો...

A	મને એ મિત્રની ઈર્ષ્યા થાય.	
B	મને એ મિત્રની સામે જતા શરમ આવે.	
C	મને નવાઈ લાગે.	
D	મને મારા મિત્ર પર ગર્વ થાય.	

5. પરીક્ષામાં કોઈ પ્રશ્ન અઘરો પુછાય ત્યારે...

A	હું ચોરી કરવાનો પ્રયત્ન કરીશ.	
B	હું જવાબ કોરો મુકીશ.	
C	હું જવાબમાં ગપ્પા મારીશ.	
D	હું જવાબ (જેટલો યાદ આવે એટલો) લખવાનો પ્રયત્ન કરીશ.	

6. ગ્રુપ પોજેક્ટ કાર્ય માટે શિક્ષક મને મારા મિત્રોથી જુદા ગ્રુપમાં રાખે તો....

A	હું પ્રોજેક્ટ કાર્યમાં ભાગ નહિ લઉં.	
B	હું મિત્રોના ગ્રુપમાં જવા જિદ્ધ કરીશ.	
C	હું નિરાશ થઈ કામમાં નીરસતા રાખીશ.	
D	હું ગ્રુપમાં મારા ભાગનું કાર્ય કરીશ.	

7. સ્કુલની પરીક્ષામાં મારા બેસ્ટ ફ્રેન્ડનો પ્રથમ ક્રમ આવે ત્યારે....

A	મને એ મિત્રની ઈર્ષ્યા થાય.	
B	મને એ મિત્રની સામે જતા શરમ આવે.	
C	મને નવાઈ લાગે.	
D	મને મારા મિત્ર પર ગર્વ થાય.	

8. બીજા વિદ્યાર્થીની ભૂલ પર શિક્ષક મને લઢે ત્યારે...

A	હું શિક્ષકની સામે બોલાચાલી કરીશ.	
B	હું ભૂલ કરનાર પર ગુસ્સો કરીશ.	
C	હું ઘરે શિક્ષકની ફરિયાદ કરીશ.	
D	હું શિક્ષકને સાચી વાત જણાવીશ.	

9. ફ્રી પીરીયડમાં આખો ક્લાસ તોફાન કરતો હોય ત્યારે, ક્લાસ મોનિટર તરીકે હું...

A	હું બધા પર ગુસ્સો કરીશ.	
B	હું પણ બધા સાથે તોફાન કરવા લાગીશ.	
C	હું શિક્ષકને ફરિયાદ કરીશ.	
D	હું ક્લાસ શાંત કરવાનો પ્રયત્ન કરીશ.	

10. જો વર્ગ શિક્ષક મને મારા મિત્રોથી જુદી જગ્યા પર બેસાડે તો....

A	હું શિક્ષકની વાત નહિ માનું.	
B	હું મિત્રો જોડે બેસવાની જિદ્ધ કરીશ.	
C	હું કોઈ પ્રતિચાર નહિ આપું.	
D	હું નવી જગ્યા પર નવા મિત્રો બનાવીશ.	

11. જો એકમ કસોટી માટે મારો મિત્ર વધુ મહેનત કરતો હોય તો.....

A	હું એની તૈયારી સમયે એને હેરાન કરીશ.	
B	હું એને મહેનત નહિ કરવાનું કહીશ.	
C	હું એની મજાક ઉડાવીશ.	
D	હું પણ એના સાથે મહેનત કરીશ.	

12. જો કોઈ કારણસર હું ગૃહકાર્ય સમયસર પૂર્ણ ન કરી શકું તો....

A	હું એ વિષયના પીરીયડમાં બંક મારીશ.	
B	હું શિક્ષક સામે ખોટું બોલીશ.	
C	હું શાળાએ નહિ જવાના બહાના બનાવીશ.	
D	હું શિક્ષકને સાચી વાત જણાવી માફી માંગી લઈશ.	

13. વર્ગમાં કોઈ મિત્ર હોશિયાર હોવા છતાં ડરને કારણે પ્રશ્નોના જવાબ ન આપતો હોય ત્યારે ...

A	હું એની મજાક ઉડાવીશ.	
B	હું એની સાથે મિત્રતા નહિ રાખું.	
C	હું એની અવગણના કરીશ.	
D	હું એને જવાબ આપવા માટે પ્રેરિત કરીશ.	

14. વાર્ષિકોત્સવમાં શિક્ષક મને નૃત્ય ન આવડતું હોવા છતાં ભાગ લેવાનું કહે ત્યારે....

A	હું શરમના કારણે ભાગ જ નહિ લઉં.	
B	હું શિક્ષકની વાત અવગણીશ.	
C	હું શિક્ષકનું માન રાખવા ભાગ લઇ લઈશ.	
D	હું નૃત્ય શીખવાનો પ્રયત્ન કરીશ.	

15. મારા કરેલા સારા કાર્ય બદલ, શિક્ષક વર્ગ વચ્ચે મારી સરાહના કરે ત્યારે....

A	હું એ વાતનું અભિમાન કરીશ.	
B	હું કોઈ પ્રતિચાર નહિ આપું.	
C	હું ખુશ થઇ જઈશ.	
D	હું બીજાને પણ સારા કર્યો કરવા સલાહ આપીશ.	

Appendix-B (Translated Copy of Test)
Situational Test to measure Emotional and Social Aspects of Students

Name	**:-**						
Standard	**:-**						
Roll No.	**:-**		**Age :-**				
School Name	**:-**						
Last Exam Result	**:-**						
Gender	**:-**	**Boy**		**Girl**			
	:-						
District	**:-**						

Part A

1. If someone breaks my favourite toy…

A	I will get angry	
B	I will insist to buy a new toy	
C	I will start crying	
D	I will try to fix the broken toy	

2. When someone gives me a gift…..

A	I will get angry	
B	I will not like it	
C	I will be surprised	
D	I will feel happy	

3. If my younger siblings are doing mischief….

A	I will get angry on them	
B	I will get irritated	
C	I will also do mischief with them	
D	I will stop them from doing mischief	

4. If someone takes me to visit a new/unknown place…

A	I will be sad	
B	I will not be interested	
C	I will feel surprised	
D	I will feel happiness	

5. If my friends make fun of me, then….

A	I will fight with them	
B	I will also make fun of them	
C	I will start crying	
D	I will talk about it to my parents	

6. If I finish a difficult task in given time then….

A	I will not believe myself	
B	I will be very surprised	
C	I will be proud of myself	
D	I will feel happy about it	

7. If my friend asks me to use my favourite thing then...

A	I will start behaving rudely	
B	I will ask for something / money instead	
C	I will refuse to give the thing	
D	I will give it to use	

8. If my parents scold me for my mistake…..

A	I will get irritated	
B	I will get angry	
C	I will cry	
D	I will admit my mistake	

9. If someone suggest me to do good deeds…

A	I will not like it/ ignore it	
B	I will deny the suggestion	
C	I will just listen it	
D	I will try to perform that good deed	

10. If my parents buy me a new cycle…

A	I will not give my cycle to anyone	
B	I will ride the cycle in full speed	
C	I will not ride the cycle	
D	I will ride the cycle carefully	

11. If someone gifts me a beautiful flower plant…

A	I will pluck all the flowers from plant	
B	I will put the plant in a corner of my house	
C	I will give it to someone else	
D	I will take care of plant	

12. If a stranger tempts me with something my favourite, then…

A	I will believe / agree to that person	
B	I will eat that thing	
C	I will run away from that place	
D	I will inform my parents immediately	

13. If my parents scold me for my siblings fault, then…

A	I will get angry on my siblings	
B	I will start crying	
C	I will admit the mistake	
D	I will try to talk to my parents	

14. If I fail in any subject's exam, then…

A	I will never study that subject again	
B	I will study the subject without any interest	
C	I will start crying	
D	I will work hard to study that subject	

15. If someone tells me that I have got bad habit of anything, then….

A	I will not respond to it	
B	I will get angry on that person	
C	I will claim it as a wrong saying	
D	I will try to stop that bad habit	

Part B

1. When my friends litter / throw garbage in classroom, then….

A	I will get angry on them	
B	I will get sad & not talk to them	
C	I will inform the teacher	
D	I will make them clean the garbage by explaining its importance	

2. If I get 1st rank in classroom then…

A	I will take pride of it	
B	I will stop preparing for other exams	
C	I will be surprised	
D	I will be happy & will work even hard	

3. If a teacher gives a lot of homework, then…

A	I will get angry	
B	I will ask my parents to write my homework	
C	I will copy it from someone else	
D	I will try to complete the work on my own	

4. If my friend score more marks then me in school exam, then…

A	I will get jealous of my friend	
B	I will be ashamed to face that friend	
C	I will be surprised	
D	I will feel proud of my friend	

5. If a very hard question is asked in school, exam….

A	I will try to copy that answer	
B	I will omit that question	
C	I will write rubbish in answer	
D	I will try to attempt the answer as much I remember	

6. If the teacher separates me from my friends for a group project, then…

A	I will not participate in group project	
B	I will insist to join my friends group	
C	I will get upset and take no interest in work	
D	I will try to finish my work in new group	

7. If my friend gets 1st rank in school exam, then…

A	I will get jealous of my friend	
B	I will be ashamed to face that friend	
C	I will be surprised	
D	I will feel proud of my friend	

8. If the teacher scolds me for some other students mistake …

A	I will talk back / fight against the teacher	
B	I will get angry on the one, who made mistake	
C	I will complain about teacher at home	
D	I will tell the truth to teacher	

9. If the whole class is doing mischief in free period, as a class monitor I will…

A	I will get angry on everyone	
B	I will also join them to do mischief	
C	I will complain about it to the teacher	
D	I will try to control the class	

10. If the class teacher asks me to sit away from my friends….

A	I will not listen to the teacher	
B	I will insist to sit with my friends	
C	I will not respond to it	
D	I will make new friends at new seat	

11. If my friend studies hard to prepare for unit test…

A	I will disturb him / her	
B	I will tell him / her not to study hard	
C	I will make fun of him / her	
D	I will also join for the preparation	

12. If I'm not able to finish my homework in time, due to some reasons….

A	I will bunk that period	
B	I will tell a lie in front of teacher	
C	I will make excuses for not going to school	
D	I will apologize and tell the truth to teacher	

13. If my friend does not give answers due to fear in class, despite being smart….

A	I will make fun of him / her	
B	I will not be friends with him / her anymore	
C	I will ignore him / her	
D	I will motivate him / her to give answers	

14. If the teacher asks me to participate in dance performance at school's annual function, even if I don't know how to dance….

A	I will feel shy and not participate	
B	I will ignore the teacher	
C	I will participate only because the teacher said to	
D	I will try to learn the dance	

15. If the teacher praises me for my good deeds in front of whole class….

A	I will feel proud of it	
B	I will not respond to it	
C	I will be happy	
D	I will suggests others to perform good deeds	

Scoring Pattern of Emotional and Social Aspects Measurement Test (Situational Test)

Researcher has developed the situational test for the emotional and social aspects measurement. Both tests have 15 items each.

Every test item has given four situations and students have to select any one situation as per respective test item. Researcher has arrange all the situations in such order that most preferable situation option is D, after that C, B and A.

Example if Students put tick marks in “D” option the score will be given “4” for that item.

Options	Score
A	1
B	2
C	3
D	4

Scoring Pattern for Emotional and Social Aspects Measurement Test

As test have 15 Emotional Aspects Item and 15 Social Aspects Items so maximum score in each section would be 60.