

fab CONNECT her

Future Female
Innovators In STEAM

Background Information



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FabConnectHer Mentoring Guide – Background Information on Core Mentoring Topics

This document provides comprehensive background information on the core mentoring topics developed for the FabConnectHer project. These themes serve as the foundation for supporting mentors who work with girls and young women in STEAM (Science, Technology, Engineering, Arts, and Mathematics) fields. Each section explores why the topic is relevant, what research and theory say about it, and how it contributes to effective, inclusive, and empowering mentorship practices.



1. Active Listening

Active listening is far more than just hearing someone speak. It is a conscious and intentional process of fully engaging with a speaker's words, emotions, and underlying messages. In mentoring relationships, especially those involving girls and young women navigating STEAM environments, active listening forms the bedrock of mutual respect, trust, and psychological safety.

The Role of Active Listening in Mentoring Girls

Mentoring girls in STEAM contexts requires sensitivity to the emotional, cognitive, and social challenges they face. These may include self-doubt, impostor syndrome, underrepresentation, and lack of relatable role models. Active listening helps mentors:

- Validate the mentee's experiences and emotions.
- Encourage self-expression and autonomy.
- Strengthen the relational bond.
- Identify unspoken concerns and subtle signals.
- Model empathetic and respectful communication.



When girls feel truly heard, they are more likely to open up, engage deeply, and develop confidence in their voice.

Key Concepts in Active Listening

Empathetic Presence

Empathy is at the core of active listening. It involves being present with the mentee's emotional state and acknowledging their experience without judgment. Empathetic presence communicates to mentees that their feelings matter.

Reflective Listening

This technique involves restating or summarising what the mentee has said in your own words. It ensures mutual understanding and shows attentiveness. Phrases like "What I'm hearing is..." or "It sounds like you feel..." are powerful tools.

Emotional Mirroring

Mentors should tune into the mentee's tone, body language, and emotional cues. Naming emotions (e.g., "You seem frustrated") helps mentees feel recognised and can foster emotional literacy.

Nonverbal Attunement

Eye contact, nodding, open posture, and silence at the right moments all signal that the mentor is engaged and receptive.

Avoiding Interruptions and Premature Advice

Active listening means resisting the urge to interrupt, solve problems immediately, or shift focus to the mentor's own experiences. Instead, the mentor must create space for the mentee to fully express themselves.

Why It Matters Specifically for Girls in STEAM

Research shows that girls and women often downplay their achievements, hesitate to speak up in group settings, and experience higher levels of social and performance anxiety in male-dominated disciplines. Active listening counters these tendencies by:

- Reinforcing their sense of value and voice.
- Creating a safe environment for exploration.
- Providing emotional support without trying to "fix" the situation.
- Encouraging autonomy and resilience.

Mentors who practice active listening help girls grow not just intellectually, but also emotionally and socially—which is key to long-term retention and success in STEAM fields.

Links to Theoretical Models

- **Carl Rogers' Person-Centred Approach:** Emphasises unconditional positive regard and empathetic understanding as essential for growth.
- **Lev Vygotsky's Social Constructivism:** Highlights the importance of dialogue and social interaction in cognitive development.
- **Daniel Goleman's Emotional Intelligence:** Identifies self-awareness and empathy as foundational competencies for effective interpersonal communication.

Practical Examples

- When a mentee shares that she feels overwhelmed by a coding assignment, instead of saying "It's not that hard," an active listener might say, "It sounds like this project is really stretching you. Do you want to talk through where you got stuck?"
- A mentor might notice that a mentee's body language seems tense and ask, "I noticed you got quiet just now—what's on your mind?"

Summary

Active listening transforms mentorship from a transactional exchange of advice to a dynamic, growth-oriented relationship. For girls in STEAM, it creates an empowering space where their ideas, feelings, and identities are respected. By listening actively, mentors build trust, model empathy, and provide the foundation for mentees to find their voice in the world of STEAM.

Further Reading and sources

- Rogers, C. R. (1961). *On Becoming a Person: A Therapist's View of Psychotherapy*.
- Goleman, D. (1995). *Emotional Intelligence: Why It Can Matter More Than IQ*.
- Brown, B. (2012). *Daring Greatly: How the Courage to Be Vulnerable Transforms the Way We Live, Love, Parent, and Lead*.
- FabConnectHer Active Listening Training Resource
- Erasmus+ Active Listening Modules



2. Constructive Feedback

Constructive feedback is essential in mentorship, particularly for girls and young women in STEAM who may already face insecurity, stereotype threat, or imposter syndrome. Feedback that is clear, balanced, and delivered with empathy helps mentees grow, improve their skills, and build confidence. It also reinforces a growth mindset and helps girls see their learning journey as one of progression rather than perfection.

The Role of Constructive Feedback in Mentoring Girls in STEAM

In mentoring relationships, feedback plays a dual role: guiding mentees towards improvement and affirming their efforts and value. Constructive feedback builds trust and signals that the mentor cares about the mentee's growth. For girls in STEAM, where perfectionism and self-doubt can be common, constructive feedback helps counterbalance critical internal narratives.

Constructive feedback supports mentees by:

- Providing clarity on expectations and performance.
- Encouraging reflection and self-evaluation.
- Reinforcing strengths while addressing areas for improvement.
- Helping develop resilience and adaptability.
- Promoting continuous learning.

Principles of Constructive Feedback

Be Specific and Objective

Avoid vague comments. Focus on behaviours or outcomes rather than personality. For example, "You were well-prepared for the presentation, but the structure could be clearer" is more helpful than "It was okay."

Balance Positives and Areas for Improvement

Known as the "feedback sandwich," this method places constructive points between two affirming observations to keep the message supportive.

Timeliness Matters

Feedback should be delivered soon after the relevant event while the memory is fresh and the insights can be applied.

Keep it Actionable

Provide suggestions or questions that help the mentee move forward. For example, "Have you thought about outlining your main points at the beginning to help the audience follow better?"

Use "I" Statements

Speak from your perspective to avoid sounding accusatory. Say, "I noticed you seemed uncertain during the Q&A" rather than "You looked confused."

Invite Dialogue

Encourage mentees to share their perspective. Feedback is more effective when it becomes a two-way conversation.

Emotional Impact and Gender Considerations

Studies show that girls often internalise feedback more deeply than boys, sometimes interpreting constructive criticism as personal failure. Mentors need to be aware of this sensitivity and frame their feedback to reinforce the mentee's self-worth and potential. Emphasising effort, progress, and growth helps balance critique with encouragement.

3. Effective Communication

Effective communication is the foundation of strong mentoring relationships. It enables trust, builds understanding, and ensures that both mentor and mentee can express themselves clearly and respectfully. For mentors working with girls and young women in STEAM, effective communication goes beyond just conveying information—it involves adapting to diverse needs, navigating different cultural and social norms, and creating space for meaningful, two-way interaction.

Communication includes both verbal and non-verbal elements and is shaped by cultural background, social context, and personal experience. In mentoring contexts, the quality of communication directly impacts how safe and supported the mentee feels, how clearly they understand feedback or guidance, and how empowered they are to express themselves.

Core Components of Effective Communication

1. Verbal and Non-Verbal Communication

Non-verbal cues—such as facial expressions, posture, gestures, tone of voice, and eye contact—can reinforce or contradict verbal messages. For mentors, being aware of their own non-verbal behaviours and accurately interpreting those of their mentees is key. For example:

- A relaxed posture and nodding can encourage openness.
- A harsh tone, even with kind words, may signal disapproval.
- Cultural backgrounds may affect how eye contact is perceived—what signals engagement in one culture might feel confrontational in another.

Albert Mehrabian's communication model suggests that up to 93% of communication effectiveness is non-verbal: 55% body language, 38% tone of voice, and only 7% verbal content. This underscores the importance of how something is said, not just what is said.



2. Cultural and Social Sensitivity

Mentors must be aware that communication norms vary widely. In some cultures, direct speech is appreciated; in others, it might be considered rude. Girls from diverse backgrounds may also carry different expectations around formality, power distance, and self-expression.

Social sensitivity also includes recognising the barriers that girls in STEAM might face—such as experiences of marginalisation or the need to navigate dual identities (e.g., being both a science student and a first-generation learner). Effective mentors listen without bias, avoid assumptions, and remain mindful of how their words may be perceived in different social or cultural contexts.

Cultural sensitivity also involves:

- Acknowledging unspoken social dynamics and adjusting tone and language accordingly.
- Being aware of the power imbalance between mentor and mentee and working to create a more equal dialogue.
- Avoiding gendered or stereotypical language, especially in STEM conversations.

3. Two-Way Communication

Effective mentoring is not a one-sided transfer of knowledge. It is a dialogue. Two-way communication involves:

- Active listening (covered in detail earlier).
- Checking for understanding.
- Asking open-ended questions.
- Being open to feedback from the mentee.
- Encouraging the mentee to lead parts of the conversation.

Creating opportunities for the mentee to speak about their ideas, reflections, and concerns promotes ownership and engagement in the mentoring process. When mentees feel their voice matters, they are more likely to participate actively and take initiative.

4. Communication in Virtual Contexts

Virtual mentoring requires even more intentional communication. The absence of physical cues makes it harder to read tone and intent. Mentors need to:

- Be deliberate in tone and word choice.
- Check in frequently with the mentee.
- Use clear visual or written aids to support communication.
- Acknowledge and navigate digital inequalities (e.g., access to stable internet or private space to talk).

Why It Matters for Girls in STEAM

Girls and young women in STEAM often face gender biases and internalised stereotypes that can affect how they communicate and how they are perceived. They may:

- Be more hesitant to ask questions in male-dominated spaces.
- Undervalue their contributions.
- Avoid speaking up out of fear of being seen as “too confident” or “not knowing enough.”

An effective mentor can counteract these barriers by:

- Validating the mentee’s input and ideas.
- Using communication that supports self-efficacy (“You explained that clearly,” “Your question shows great insight”).
- Helping mentees develop their own communication style for professional and educational settings.

Additionally, girls from underrepresented communities might also have experiences of being silenced, misunderstood, or tokenised. A mentor who communicates clearly, respectfully, and inclusively helps reframe these experiences and builds a foundation of belonging and empowerment.

Summary

Effective communication in mentoring is about much more than exchanging information—it is about building connection, trust, and mutual respect. For mentors of girls in STEAM, this means mastering verbal and non-verbal cues, being culturally aware, and facilitating a two-way, inclusive dialogue. Done well, effective communication helps mentees feel seen, heard, and empowered to take an active role in their own learning journey.

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- Goleman, D. (1995). Emotional Intelligence: Why It Can Matter More Than IQ
- Mehrabian, A. (1971). Silent Messages: Implicit Communication of Emotions and Attitudes
- Intercultural Communication in Contexts – Martin & Nakayama (2007)
- Hofstede Insights: <https://www.hofstede-insights.com/>
- Mentorprogramma Fryslân: <https://mentorprogrammafriesland.nl/>



4. Creating a Supportive Learning Environment

A supportive learning environment is not just about the physical space—it's about cultivating a social and emotional climate that fosters curiosity, resilience, collaboration, and confidence. In mentoring girls in STEAM, creating this kind of environment is especially critical, as it can help dismantle internalised stereotypes, foster inclusion, and promote a sense of belonging in often male-dominated fields.

This section draws heavily on educational psychology, inclusive pedagogy, and creative learning principles, as outlined in the FabConnectHer mentoring guide *Creating a Supportive Learning Environment*. It outlines what makes an environment truly supportive and how mentors can contribute to such a space through mindset, structure, and relationships.

Key Concepts and Theories Behind Supportive Learning Environments

1. Multiple Intelligences and Personalised Learning (Howard Gardner)

Gardner's theory of multiple intelligences (1983) stresses that individuals learn in different ways—linguistic, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and more. Mentors who recognise and work with a mentee's preferred learning style support a more inclusive and effective learning experience.

For girls in STEAM, this can mean:

- Using visual-spatial tasks to build understanding in math.
- Encouraging collaborative learning to activate interpersonal intelligence.
- Including music, movement, or storytelling in science and tech explanations.



2. Zone of Proximal Development (ZPD) (Lev Vygotsky)

ZPD is the space between what a learner can do independently and what they can do with guidance. Mentors play a key role as the “more knowledgeable other,” offering scaffolding that stretches the mentee’s capabilities. For example, helping a mentee solve a problem step-by-step rather than just giving the answer fosters growth and independence.

3. Experiential and Reflective Learning (John Dewey)

Dewey argued that education should be rooted in experience. He believed learners grow by engaging in real-world problems, then reflecting on those experiences. In mentoring, this means:

- Offering opportunities to “learn by doing.”
- Encouraging mentees to reflect aloud after projects or activities.
- Letting them take ownership of their learning journey.

4. Creativity and Flow (Elliot Eisner, Mihaly Csikszentmihalyi)

Eisner emphasised that creativity thrives when learners are engaged in the process, not just the result. Csikszentmihalyi’s concept of “flow” complements this—deep focus, intrinsic motivation, and enjoyment during learning. Mentors can foster flow by:

- Encouraging autonomy and curiosity.
- Setting challenges that match, but stretch, a mentee’s skill level.
- Minimising external pressure and maximising intrinsic motivation.



Elements of a Supportive Learning Environment for Girls in STEAM

1. Growth Mindset (Carol Dweck)

Girls may internalise societal beliefs that boys are “naturally better” at science or maths. A growth mindset—believing that abilities develop with effort—is crucial. Mentors model this by praising effort, not innate talent (“You worked hard to figure that out” rather than “You’re so smart”).

2. Inquiry-Based Learning (IBL)

IBL supports active participation. Mentors guide mentees in asking questions, conducting mini-investigations, or solving authentic problems. This encourages girls to take initiative and see themselves as creators of knowledge, not just recipients.

3. Universal Design for Learning (UDL)

UDL promotes accessibility by offering multiple ways to learn and express knowledge. For mentors, this could mean:

- Allowing mentees to explain ideas through drawings, presentations, or models.
- Providing options for participation (talking, writing, hands-on).
- Adapting tasks to fit varying levels of background knowledge or confidence.

4. Social-Emotional Learning (SEL)

SEL helps mentees understand and manage their emotions, build empathy, and maintain positive relationships. Girls in STEAM benefit when mentors create emotionally safe spaces where vulnerability is accepted and emotional expression is respected.

5. Physical and Psychological Safety

A supportive environment respects boundaries, ensures physical comfort (in both virtual and in-person spaces), and promotes respectful, inclusive dialogue. Microaggressions, biases, and stereotypes should be actively addressed and not allowed to undermine the learning space.

The Role of Mentors in Shaping the Environment

Mentors are not just content experts—they are culture shapers. Their attitudes, language, and openness significantly influence whether mentees feel supported and seen. Effective mentors:

- Encourage questioning and critical thinking.
- Treat mistakes as part of the learning process.
- Invite collaboration and peer support.
- Use inclusive language and examples.
- Celebrate diverse ways of thinking and learning.

Why It Matters for Girls in STEAM

Girls often enter STEAM spaces where they do not see others like themselves, leading to feelings of isolation or underconfidence. Supportive environments:

- Counteract stereotype threat.
- Help girls develop a strong sense of agency and belonging.
- Promote risk-taking and experimentation without fear of failure.
- Empower girls to see themselves as future leaders in STEAM.

A truly supportive environment does not “fix” girls to fit the system—it adapts the system to support their growth.



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- Eisner, E. (2002). *The Arts and the Creation of Mind*
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- CAST (2018). *Universal Design for Learning Guidelines*
- Seligman, M. (2011). *Flourish: A Visionary New Understanding of Happiness and Well-being*
- Creativity, Culture and Education (2020). *The Case for Creative Learning*



5. Gender-Specific Content in Mentoring

Mentoring girls and young women in STEAM fields requires more than general guidance—it demands an understanding of the gender-specific barriers they face and the development of tools to overcome them. Gender-specific content in mentoring ensures that the experiences, needs, and aspirations of girls are acknowledged and addressed, rather than treated as secondary or invisible.

This section draws from the extensive insights in the FabConnectHer Mentoring Guide – Gender Specific Content, which is grounded in research on gender equity in education, psychology, and leadership. It focuses on the societal, cultural, and internal challenges girls in STEAM face and how mentors can respond with empathy, strategy, and structure.

Key Gender barriers in STEAM

1. Stereotypes and Unconscious Bias

From early childhood, girls are often exposed to messages—explicit and implicit—that men are more naturally suited to math, science, and technology. These stereotypes limit self-perception and shape what careers girls see as “for them.” Unconscious bias among teachers, peers, and even mentors can further reinforce these limitations. For instance:

- Boys may be more frequently called on in STEM classes.
- Girls may receive more praise for neatness than for innovation.
- Assertiveness in girls may be misinterpreted as aggressiveness.

2. Impostor Syndrome and Stereotype Threat

Girls in STEAM frequently experience impostor syndrome—the belief that they are not good enough or that their success is undeserved. Stereotype threat (the fear of confirming negative stereotypes) can lead to performance anxiety, reduced confidence, and disengagement from STEAM subjects.

Mentors must be able to recognise and respond to these feelings, not with dismissive reassurances, but with validation and strategies to reframe doubt into growth.

3. Lack of Representation and Role Models

Girls are less likely to see women scientists, engineers, or inventors in textbooks, media, or leadership positions. The absence of relatable role models contributes to the belief that STEAM is not for them. Mentors fill this gap when they:

- Share stories of women in STEAM (especially diverse examples).
- Highlight the mentee's potential to become a role model herself.
- Make space for intergenerational dialogue among women in STEAM.



Empowerment Strategies for Mentors

Building self-efficacy is one of the most powerful tools a mentor can offer a girl in STEAM. Self-efficacy refers to a person's belief in their ability to succeed in specific situations or accomplish a task. It plays a major role in how one approaches goals, challenges, and persistence in learning. For girls in STEAM, who may frequently encounter external doubts and internal hesitations, building self-efficacy is essential to long-term engagement and success. Mentors can foster self-efficacy by shifting focus away from innate ability and toward effort, progress, and perseverance. For example, praising the process ("You really stuck with that difficult task and figured it out") rather than the outcome ("You're so smart") encourages a growth mindset. Helping mentees set small, achievable goals creates early wins that build momentum and confidence. Encouraging reflection on past successes can also remind mentees of their progress and resilience. According to Bandura's theory of self-efficacy (1997), mentors can support self-efficacy through four key pathways: mastery experiences (completing a task successfully), social modelling (seeing others like them succeed), social persuasion (receiving constructive encouragement), and managing emotional states (helping reduce anxiety and fear around failure).

Reframing impostor feelings is another crucial step in empowering girls. Many high-achieving girls and women in STEAM report experiencing impostor syndrome—the persistent feeling that they are not truly competent and will eventually be "found out" as frauds. Rather than dismissing these feelings, effective mentors acknowledge them and normalise the experience. Hearing that these doubts are common, even among successful professionals, can reduce the shame or isolation mentees may feel. Mentors can guide mentees in distinguishing between facts and self-critical interpretations, helping them to look at their achievements objectively. Using affirming language that emphasises growth, skills, and potential reinforces that their presence and progress are valid. Reframing the narrative around failure—seeing it as a normal and essential part of learning—further reduces the psychological weight of impostor thoughts.



Affirming gender identity and intersectionality means recognising that every girl brings a unique combination of lived experiences, strengths, and challenges. While mentoring girls as a group can reveal shared barriers, it is important to understand that gender does not operate in isolation. Race, class, culture, ability, sexuality, and other aspects of identity intersect to shape each mentee’s experience. For instance, a Black girl in a tech program may face different expectations and assumptions than a white peer; a girl from a rural background might have limited access to STEAM resources or support networks. Mentors should approach each relationship with openness, curiosity, and respect. Rather than assuming what a mentee needs, mentors can ask reflective questions such as: What barriers might this specific mentee face in her context? What strengths and perspectives does she bring that are often overlooked? How can her full identity be acknowledged, reflected, and supported in this mentoring space? Affirming intersectionality means actively creating space where all aspects of a girl’s identity are respected—and where she is empowered to see herself not just as someone who “fits in” but as someone who belongs and contributes meaningfully.



Community and Peer Support

Girls in STEAM benefit greatly from mentorship communities where experiences are shared, struggles are normalised, and successes are celebrated. These peer-based environments foster confidence and connection. When girls see that others like them are also navigating STEAM challenges—and succeeding—they are more likely to persevere themselves.

Mentors can nurture this sense of belonging by facilitating informal mentoring networks, buddy systems, or peer-to-peer mentoring formats. Even simple initiatives, like shared reflection sessions or story-sharing circles, can help mentees build their confidence by realising they are not alone in their journey.

In addition to the emotional support, peer communities also provide valuable opportunities for collaborative learning. Girls can exchange knowledge, give and receive feedback, and model resilience for one another. This kind of network lays the foundation for long-term solidarity and collective empowerment—both of which are essential in changing the wider culture of STEAM fields.

Research consistently shows that strong peer support and professional networks significantly increase retention, engagement, and satisfaction in STEAM pathways. Mentors who integrate girls into such networks are not only supporting individual growth but also contributing to systemic change.

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- Steele, C. M. (2010). Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do
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- AAUW (American Association of University Women). Solving the Equation: The Variables for Women’s Success in Engineering and Computing
- UNESCO/ONU Mujeres. Las Mujeres en Ciencias, Tecnología, Ingeniería y Matemáticas en América Latina y el Caribe
- FabConnectHer Mentoring Guide – Leadership and Peer Support Case Studies (Technovation Girls, SheCodes, Girl Up clubs, etc.)

6. STEAM Skills and Mentoring

In mentoring girls and young women, particularly in the context of STEAM (Science, Technology, Engineering, Arts, and Mathematics), one of the most essential tasks is helping them develop the core skills required for success in these fields. These skills not only cover specific technical competencies but also include soft skills such as problem-solving, critical thinking, creativity, and collaboration—skills that are increasingly recognised as crucial for innovation in the modern workplace.

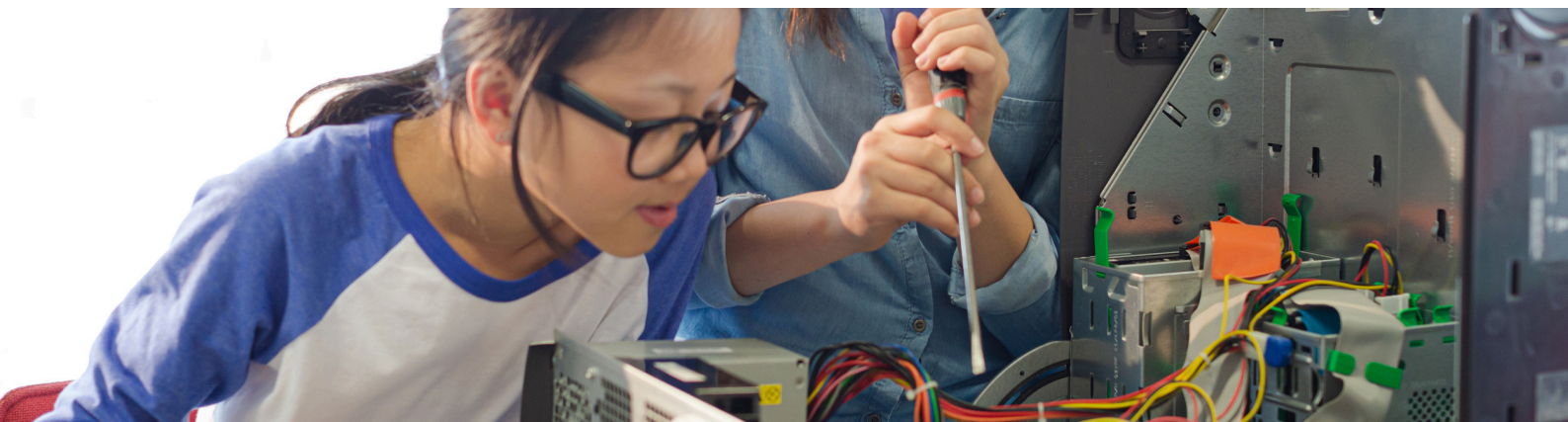
This section highlights the importance of mentoring girls in acquiring and refining STEAM-related skills, as well as how mentors can help them apply these skills in real-world scenarios. It also addresses the specific challenges girls face in developing confidence in their abilities and how mentors can nurture their growth.

Key Components of STEAM Skills Development

1. Technical Skills in STEAM Fields

Technical skills are foundational for success in any STEAM field. These range from basic programming and mathematical abilities to advanced knowledge in fields like bioinformatics, robotics, and environmental science. For girls in STEAM, acquiring these skills is often complicated by the gendered perception that these subjects are more suited for boys. Mentors can help counteract these barriers by:

- **Introducing hands-on projects:** Encouraging girls to experiment with tools, such as coding software, mechanical kits, or digital design platforms, allows them to directly apply and reinforce theoretical knowledge.
- **Creating small, achievable tasks:** Mentors can introduce girls to foundational tools and software like Scratch, Python, or Tinkercad, which allow them to feel empowered and capable.
- **Exploring real-world applications:** Connecting learning to tangible career paths or innovation examples, like renewable energy or technology entrepreneurship, helps mentees see the relevance and potential impact of their skills.



2. Problem-Solving and Critical Thinking

Problem-solving and critical thinking are central to all STEAM fields, but they are also skills that require practice, time, and a growth-oriented mindset. Problem-solving in STEAM often requires tackling ambiguous, complex challenges, and mentors can guide their mentees in approaching these problems methodically. This involves:

- Promoting curiosity-driven inquiry: Encouraging mentees to ask questions, explore multiple solutions, and test their ideas builds problem-solving skills.
- Facilitating teamwork and collaboration: Many STEAM projects are group-oriented. Collaboration teaches negotiation, decision-making, and collective problem-solving, all of which are vital for career success in STEAM industries.
- Reframing mistakes as learning opportunities: Fostering an environment where failure is seen as part of the learning process builds resilience and teaches that mistakes provide valuable insights, not permanent setbacks.

3. Creativity and Innovation

While creativity is often associated with the arts, it is equally vital in fields like engineering, technology, and science. Innovative thinking can drive breakthroughs in these fields. Girls, however, are often socialised to believe that creativity is not a strength for them in technical subjects. Mentors can counter this by:

- Encouraging creative problem-solving: Mentors should create environments where creative solutions are praised, whether in developing a new app, engineering a prototype, or designing a scientific experiment.
- Exploring interdisciplinary approaches: For example, a project combining design thinking with computer programming or art with physics can showcase how creativity and technical skills intersect in the real world.
- Introducing design thinking: Using frameworks like the design process (empathise, define, ideate, prototype, test) helps mentees see how creativity is integral to solving complex challenges in STEAM fields.



4. Communication and Presentation Skills

In STEAM fields, it is not enough to be good at technical work; it's equally important to be able to communicate complex ideas to various audiences, whether colleagues, stakeholders, or the public. For girls, developing strong communication skills can be particularly empowering in fields where they may feel underrepresented. Mentors can help by:

- Providing opportunities for public speaking: Encouraging girls to present their projects, research, or ideas in front of an audience helps develop confidence in communicating their thoughts.
- Fostering the use of visual aids and storytelling: Girls should be taught how to present their technical work in ways that are accessible and engaging to others, through visuals, demonstrations, and clear explanations.
- Building teamwork in communication: Collaboration often requires communicating ideas and giving feedback. Mentors can guide girls in learning how to communicate effectively within teams, listen actively, and resolve conflicts constructively.

Why STEAM Skills Matter for Girls

In today's fast-evolving world, the demand for skilled workers in STEAM fields is rapidly increasing, yet women and girls remain underrepresented in these areas. Encouraging girls to develop a strong foundation in STEAM skills empowers them to pursue careers in innovation, research, and leadership, while also contributing to the diversity of thought and problem-solving approaches in these fields.

For girls, acquiring STEAM skills does more than just open doors to potential careers—it builds self-confidence, helps them develop resilience, and empowers them to see themselves as capable innovators and leaders. As research has shown, girls who are mentored effectively in STEAM are more likely to stay in these fields, build confidence in their abilities, and pursue long-term success.

Moreover, STEAM skills are vital for personal empowerment. Today's world requires everyone, not just professionals, to have a basic understanding of technology, data, and the scientific method. For girls, mastering these skills helps prepare them to be informed, engaged, and active participants in an increasingly digital and interconnected world.

The Role of Mentors in STEAM Skills Development

Mentors play a critical role in helping girls build confidence in their abilities while navigating challenges in their STEAM learning journey. Effective mentors:

- Provide encouragement and celebrate small successes.
- Create a space where creativity, risk-taking, and even failure are embraced as part of the learning process.
- Facilitate access to resources, networking opportunities, and exposure to real-world applications.
- Introduce mentees to role models and peers who share similar experiences or can inspire new ways of thinking.
- Provide guidance and constructive feedback that focuses on effort, growth, and potential, rather than just the final product.

Mentoring in STEAM is not only about imparting knowledge—it is about helping girls see the value in their contributions, and to believe that their unique perspectives can bring about positive change in the world.

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