

Promoting Inventive Identity Exploration
Among Adolescent Girls

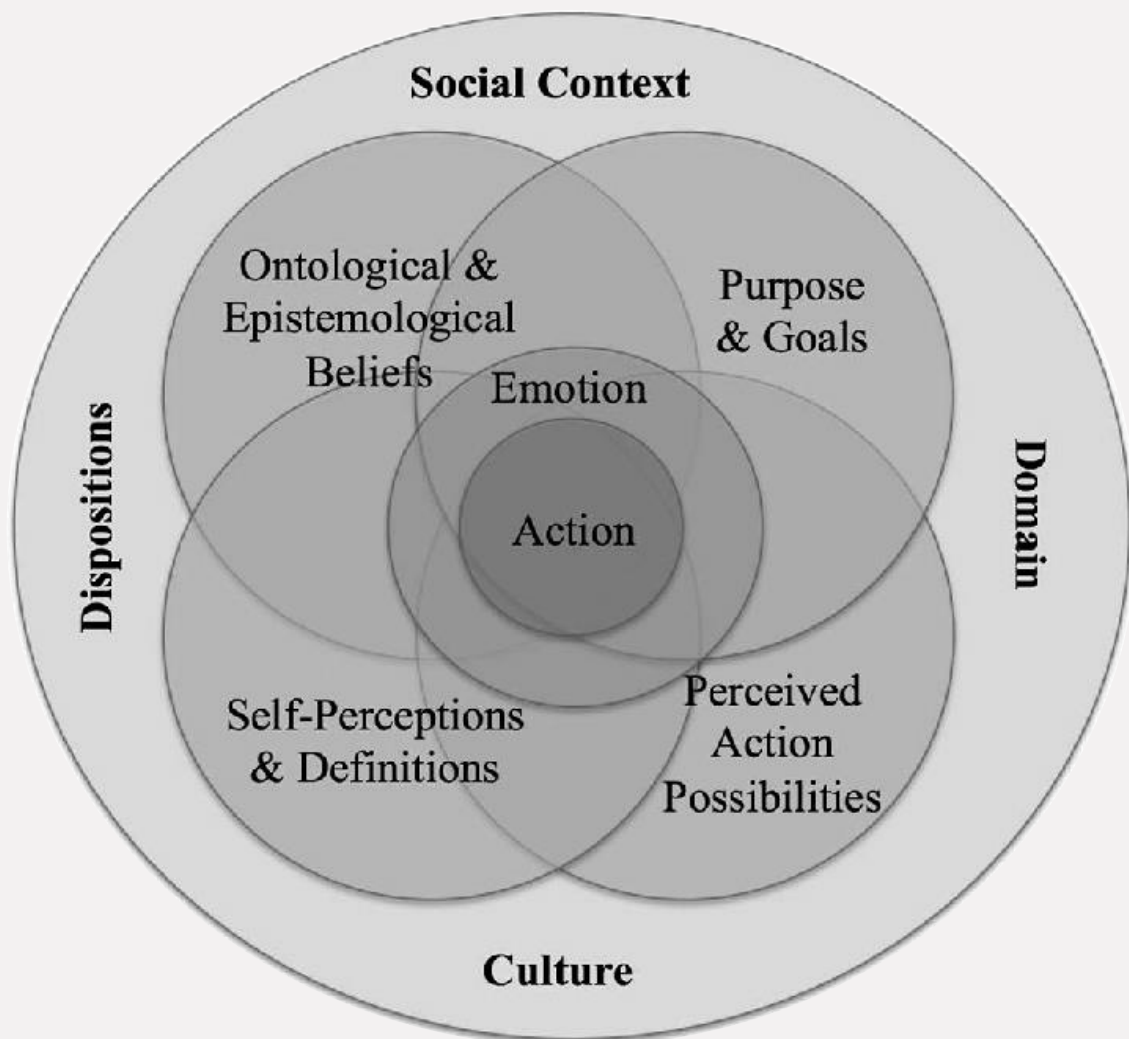
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We aimed to promote inventive identity among
adolescent girls through an invention-focused
museum exhibition

The Smithsonian Institution’s Lemelson Center for the Study of Invention and Innovation has been designing the Game Changers exhibition for the Smithsonian National Museum of American History (NMAH) on the history of inventions in sports. A main goal of the exhibition is to promote visitors’ exploration of their own inventive identity, particularly among visitors from underrepresented groups in STEM, such as adolescent girls.

The theoretical framework was The Dynamic
Systems Model of Role Identity

Promoting identity exploration around inventiveness is conceptualized using The Dynamic Systems Model of Role Identity (DSMRI, Kaplan & Garner, 2017). The DSMRI depicts identity as a hierarchical and dynamic system of a person’s multiple social roles, which each role constituted by the interdependence of four components: beliefs about reality, purposes and goals, self-perceptions, and perceived action possibilities. Identity processes in one role can promote identity change in other roles.



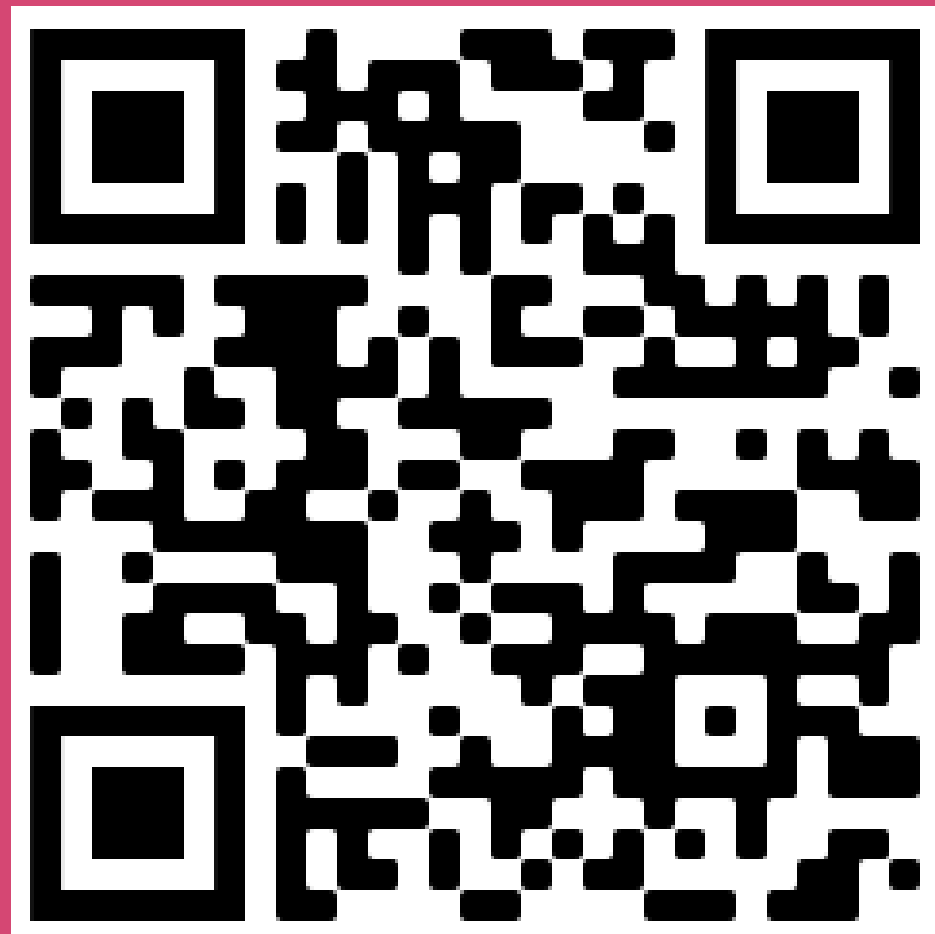
We conducted exhibition virtual tours
with focus groups of adolescent girls

In June 2021, we conducted two focus groups with ethnically diverse early-mid adolescent girls recruited through a Girl Scouts community partner. Each focus group had four participants who participated in an hour-long virtual tour of an early rendition of the exhibition. Two researchers independently analyzed each transcript of the focus groups using the DSMRI analysis guide and codebook (Kaplan & Garner, 2020).



Environmental scaffolds
promote adolescent girls’
identity exploration of
inventiveness in their lives

For more info about
the project, scan here →



The participants explored their inventiveness
in different role identities in their lives

The analysis indicated that the virtual exhibition context and facilitation prompts promoted participants’ self-relevance of the exhibition’s content to their role identities of:

- Girl scout
- Having a hobby
- Family roles
- Future career roles

All participants explored what it means to be inventive in different role identities in their lives while explicating invention-related perceptions of reality, goals, self-perceptions, and action possibilities.

In addition, focus group peers played an important role in promoting participants’ self-relevance and use of the exhibition’s content to explore inventiveness in their role identities.

Establishing personal connections to a new
domain supports inventive identity exploration

The findings highlighted the adolescent girls’ capacity for making personal meaning of the exhibition’s content of inventions in sports and exploring its meaning to their inventiveness in different roles in life.

The findings emphasized the importance of scaffolds in the environment for promoting the adolescents’ construction of personal connection and their use of identity exploration strategies for exploring their inventive identity.

The participants’ shared role identities as Girl Scouts framed their beliefs, self-perceptions, goals, and action possibilities regarding inventiveness. This shared role identity was also a basis for peer scaffolding of self-relevance and identity exploration during the virtual visit.

Program designers can promote identity exploration of inventiveness with content not necessarily connected to the current identities of adolescent girls and others from underrepresented groups in STEM.

References:

- Kaplan, A. & Garner, J.K. (2017). A Complex Dynamic Systems perspective on identity and its development: The Dynamic Systems Model of Role Identity. *Developmental Psychology* 53 (11), 2036-2051. <https://doi.org/10.1037/dev0000339>
- Kaplan, A., & Garner, J. K. (2020). Dynamic Systems Model of Role Identity (DSMRI): Analysis guide and codebook: Version 3. Temple University & Old Dominion University.

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