
Mediating Students' Empathy Development Through Play: A Study on the IMPACT Deck

Sarah T. Zipf^a, Pauline John^a, Tehniyet Azam^a, Zach Lonsinger^a

^a*Teaching and Learning with Technology, The Pennsylvania State University, University Park, PA 16802, USA*

KEYWORDS

Playful learning
Empathy development
Mediated communication
Educational technology

ABSTRACT

Declining student engagement and social connection attributed to digital technologies present critical challenges for higher education, negatively impacting students' capacity for empathy and interpersonal understanding. These declines require intentional pedagogical interventions that invite both critical reflection and inclusive dialogue. One such intervention is introducing play into academic spaces. Rooted in research that affirms play as a site of creativity, imitation, and meaning-making, this study explores the use of the Inclusive and Multicultural Perspectives with Action, Characters, and Technologies (IMPACT) Deck, a tabletop game designed to foster student engagement around the societal and interpersonal implications of technology. We utilize survey method with the Basic Empathy Scale and open-ended questions. Findings offer insight into how playful learning tools can generate meaningful peer interactions and reflective engagement, contributing to broader efforts of reimagining classroom practices that promote empathy, inclusion, and critical thinking in technology-mediated contexts.

Introduction

Long before Generation Z (GenZ, born between 1997-2012) were born, scholars warned that a childhood shaped by digital technologies could disrupt typical development trajectories (Brod, 1984). Today, these early warnings appear increasingly accurate: nearly all teenagers own smartphones and report being online "constantly" (Pew Research Center, 2025, para. 2). Such pervasive screen time reduces opportunities for in-person interactions and reshapes relational development. Cytowic (2024) argues GenZ's overuse of technology contributes to their social disconnection, apathy, and lack of empathy for others. Contemporary college students cannot be separated from their digital ecosystems that structure and guide their daily lives; their psychological and empathy development are now entangled with their technology habits.

Developmental research reinforces this concern. Adolescents, including college students, have less empathy, or the ability to understand others' feelings and experiences, than adults (Kim et al., 2020). Without empathy, "the world feels harsh, indifferent, less caring," impeding on the ability to maintain positive relationships (Howe, 2012, p. 2). While earlier generations may have cultivated empathy through face-to-face experiences, GenZ's overreliance on digital communication appears to change how they perceive and relate to others.

Teenagers' experiences on and offline feel separate (James et al., 2017). These distinct dimensions and mediated communication can abstract or dehumanizes others, which makes expressing and developing empathy difficult. As colleges and universities consider how to train and educate students for successful futures, attending to the whole development of students is important. Empathy makes teamwork better, creates a sense of safety and security, and makes for superior leaders.

To help address the issues of empathy development in college students, we recommend adding play. Playing in college means withdrawing from the normed behaviour of serious academics (Forbes & Thomas, 2022). Often associated with young children, play is fundamental to human development; learning starts with creativity and imitation (Holzman, 2010). Play gives real boundaries in a fictitious situation, allowing for creativity to be centred (Holzman, 2010) and gives a new way of seeing and understanding our changing society and technology-laden activities. Regardless of age, tabletop games can create a new way for students to engage with and learn about each other in a classroom setting and support the development of empathy. Informed by Kim et al. (2020) that teens and young adults can benefit from mediated support developing empathy, we sought to understand how play with a tabletop game-like learning tool supported students' empathy development.

Specifically, this study seeks to understand if a newly developed tool, the Inclusive and Multicultural Perspectives with Action, Characters, and Technologies (IMPACT) Deck, could be used to help create situations where empathy might develop. This study is not an assessment of the IMPACT Deck but rather uses the tool to explore play, as an active learning experience, which can support students' empathy development. Our primary research question was: In what ways do tools like the IMPACT Deck help mediate the development of empathy?

We learn that students found the specialized deck of cards to be a fun and playful way to learn about themselves and others. Results show that bringing play into the classroom is a promising way for instructors to promote and support empathy development in college students.

Literature Review

Empathy

As higher education grapples with preparing students for an uncertain technology-enhanced future, durable skills have become a critical component of college education. Discipline specific knowledge, while important, is no longer enough to ensure students are successful in their future careers. With changes to technologies and technical skills ever evolving such that colleges and universities have to maintain and update curriculum, durable skills are long-lasting, interdisciplinary and transferable skills that are increasingly more important for students to have when they graduate. Empathy is closely linked to durable skills, like mindfulness, (Pathsmith, 2024).

Empathy is difficult to define (Wispé, 1986). Unlike sympathy which seeks to alleviate suffering, or compassion which is often directed towards the suffering of others (Zhou, 2022), empathy means to understand how someone else feels and take their perspective (Vrečer, 2015). It is a "relational process" of identifying the similarities and differences of others' experiences while moving beyond the view of self (Bollen, 2023). Empathy can be conceptualized by two factors: affective and cognitive empathy. Both factors are necessary for the feeling of empathy (Segal, 2011,2014). Affective or emotional empathy is the unconscious response to someone else's feelings (Segal, 2014). Emotional empathy is considered primitive and even contagious but

always focused on the other person and not the self (Parson, 2025). Conversely, cognitive empathy is the conscious process and awareness of preventing the affective empathy from overwhelming the self (Segal, 2011,2014). Cognitive empathy is more closely related to perspective taking and requires more mental effort than emotional empathy (Parson, 2025). It can mean avoidance (Cameron et al., 2019) and creating a separation of feelings from others to protect the self.

Being too empathetic can create issues. It can open the self up to suffer feelings of burnout, anxiety, and vicarious trauma, among other mental health issues (Huang et al., 2025). As Breithaup and Hamilton (2019) warns, empathy can lead to “self-loss” and “a weakening of one’s own interests, feelings, self-perception, intensity, identity, self-esteem, or self-awareness” (p. 81). Empathy can be described as a continuum, in which expression changes by context or general ability (Parson, 2025). Allowing the self to place boundaries around the empathetic response and balancing between the self and other is necessary, so as to not suffer unintentional harm to the self.

Developing empathy is critical to a successful and healthy society. Important to this study is developing empathy in a diverse population, which can only change through learning and understanding others’ situations and social systems (Segal, 2011). As institutions of higher education typically bring together a diverse population of students’ backgrounds, views, and experiences, empathy can play a key factor in student success, but to do so requires intentional focus (Parson, 2025). Konrath et al. (2011) found college students’ empathic concern and perspective taking have decreased since 1979, with a significant drop around 2000. They attributed some of this decline to the growth of personal technology and fewer interactions with others in real life. Peifer and Tassoobshirazi (2022) contend the COVID-19 pandemic likely accelerated a decrease in college students’ cognitive empathy. Developing empathy in college students matters, as students support or help deal with peers’ mental health issues (Egbert et al., 2014), opportunity inequities by academic discipline and preparation for certain careers (Olsen & Gebremariam, 2022), and unfulfilled institutional missions dedicated to ethics, virtues, and student development (see Peifer & Taasoobshirazi, 2022). Creating instances where empathy is taught supports deeper learning experiences and opportunities for personal development (Wilson, 2011), which, arguably, are fundamental goals of higher education.

Student Engagement and Playful Interactions

Overall, student engagement has not fully rebounded from the COVID-19 pandemic in critical areas related to academics (Igor et al., 2025). Student engagement can mean the effort students put into their experiences, inside and outside of the classroom, and through the activities and actions offered by the campus. Student engagement is often directly related to retention (Pendakur et al., 2020) which makes it an important metric for most institutions of higher education. The National Survey of Student Engagement (NSSE, 2024) shows dips in opportunities of learning together, like group studying or asking a classmate for help. Around 35% of students said they do not participate in any extracurricular activities (Inside Higher Ed & generation lab, 2024). Further, time spent in the classroom has also declined (Igor et al., 2025).

Positive and social growth can increase when students are given intentionally structured interventions, specifically, student engagement, especially when collaboration and interaction happen between peers (Pendakur et al., 2020). Introducing play into the classroom is one way for students to engage with the content and each other. Play can be the most powerful form of engagement (Forbes & Thomas, 2022). It is a highly effective form of changing discourse as it suspends rules and norms for imagination and creativity, and seeks to teach empathy (Whitton, 2022).

The definition of play is complex and more thoroughly studied and recognized in early childhood education than higher education. Play in higher education has received some attention in recent years, and it is known to encourage increased student engagement and more authentic assessment (Forbes, 2021) and offers open-ended and enjoyable learning processes that support student curiosity, spontaneity and exploration (Togsverd & Pedersen, 2024). Playful learning can help increase student engagement and learning outcomes by removing barriers and creating a safe place with peers, advancing intrinsic motivation, and allowing for more vulnerable engagement, and lead to better learning outcomes (Forbes, 2021). Play and “playful learning” provide space in which failure can be supported and assessment less penalizing (Whitton, 2022). Importantly, play gives students the freedom to engage with each other without concern to academic performance.

Play in higher education can be a myriad of activities or ideas, including arts and crafts, board games, scavenger hunts (Forbes & Thomas, 2022) or other activities not associated with typical college-level education practices. One form of play, role-playing, provides an assumed experience of someone else, which opens discussions of topics that are often hidden or unspoken (McGregor, 1993) and supports communication skills, like debating and diplomacy (Prager, 2019). Role-playing invites peer interaction and a divergence from the typical lecture-based classroom (McGregor, 1993; Stevens, 2015). We defined play in this study as an imaginative form of practice, unrestricted by goals (Gray, 2017) and an activity intended to support students’ creative problem-solving by centering the students’ experience and actions (Burenkova et al., 2015).

IMPACT Deck

Our unit, Teaching and Learning with Technology, developed a tabletop game-like activity called the Inclusive and Multicultural Perspectives with Action, Characters, and Technologies (IMPACT) Deck (“the deck”). The deck invites students to think and learn more about how technology impacts people in their lives. It is available in physical form, like a deck of cards, and digitally via iOS and Android apps. The deck provides a semi-structured form of play by organizing character, technology, and reflection question cards into a conversation starter. The combination of cards allows for users to think critically about technology and the impact it has on different people.

Each character card includes four attributes: their occupation, where they live, a family fact, and a personal fact. In addition to these attributes, the visual design adds another element to each character. Similarly, every technology card includes three short definitions and a visual icon to help the player understand each technology. The last card type, the action card, is what connects everything together. These cards provide a form of reflection question to understand what opportunities or challenges the character might have with the technology. Each action card includes color-coded blanks for the character card (blue) and the technology card (red) to create a scenario for the players to discuss. For example, Figure 1 shows Jefry, a 43-year-old farmer from Huancayo, Peru, using and interacting with bot technology. Figure 1 shows just one of over 27,000 different scenarios that can be drawn from this deck.

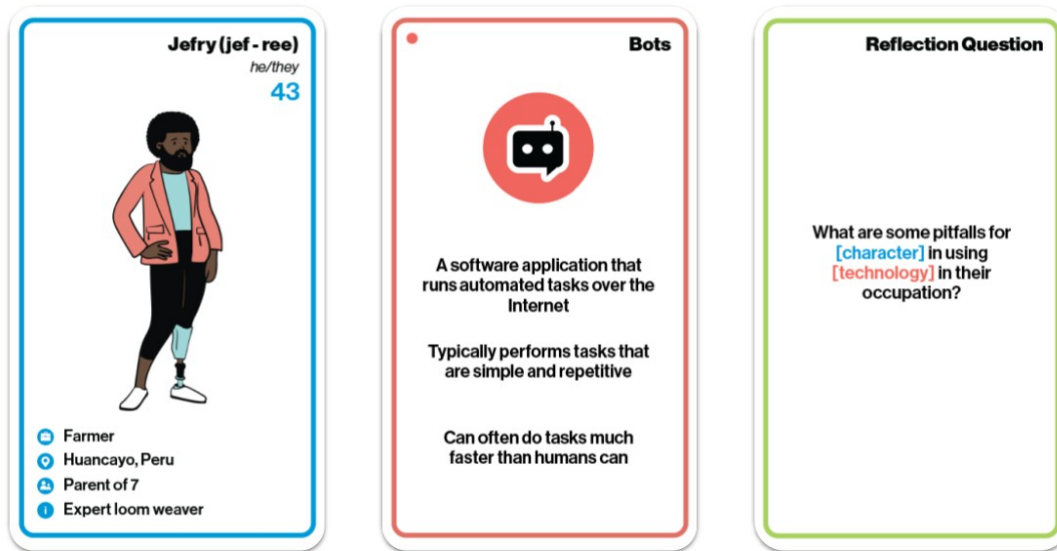


Figure 1 The IMPACT Deck is a deck of cards, consisting of three types of cards: a character card with descriptive characteristics; a technology card; and an action card in which players imagine how the character and technology intersect.

Based on the five dimensions of role-playing (Greco, 2009), the IMPACT Deck has low involvement based on the imaginative nature of the cards, response specificity because there is no right or wrong, and is not competitive with winners or losers. The deck changes as people engage with the cards and has a loose structure that allows for the maximum creativity of responses. The deck could have a variety of roles being played, ranging from familiar to unfamiliar, and low to high specificity depending on the cards and the demographics and backgrounds of the students playing. The deck can be used for numerous instructive purposes, including ice breakers, creative writing, and facilitating conversations about inclusion in society or ideas about technology use. While not inherently cooperative, it focuses on users' ideas, conversations with others, and perspective taking with their peers.

The IMPACT deck supports a playful means for group creativity and engagement by encouraging role-play as the participants imagine a real-world scenario. The characters and technologies described in the cards may not be familiar to the students, which pushes the students to build on and challenge each other's world-views and possible biases. The cooperative nature of the game and the relative distance of the participants' self from the characters lead to the creation of a "magic circle" (Nørgård et al., 2017), a safe space for engagement and experimentation. The open-ended, process-focused nature of the play supported by the deck also encourages curiosity and imagination. No single use of the deck is defined, as one, two, or all three cards can be used to initiate conversations or be used to meet specific classroom goals. For example, a marketing instructor might have students randomly select a character card to direct a communication campaign. A language instructor might use the technology and reflection question cards as a writing prompt. The deck could also be used for teaching about diversity, or thinking about inclusive technology use, or any combinations of play. For this study, we consider the deck to be a supportive tool to mediate conversations between students in a playful, game-like structure.

Methods

The site location for this study is a large, research-intensive university located in the mid-Atlantic region of the U.S., with an undergraduate student enrolment over 40,000. This study was approved by the institutional review board.

We maintained a list of 30 instructors who had received a physical deck or had communicated their desire to use the deck in their classes. We emailed these instructors and asked them to send our recruitment material to their rosters that used the deck for class activities. The researchers were not involved with the use of the deck during class and surveyed students about their experience of the tool afterwards. The deck was used as a class activity, under the discretion and direction of their instructor, so any sort of issue regarding the deck would have been framed or managed by the classroom instructor at that time.

The survey contained consent language such that students implied their participation in the study by confirming their age and advancing to the next set of survey items. Students could abandon or leave the survey at any time and received no compensation for their participation. The survey was an online, self-administered, anonymous survey, disconnected from any educational record or grade. Data were collected in 2024 during the summer and fall semesters.

The student survey incorporated the 20-item Basic Empathy Scale (Jolliffe & Farrington, 2006), which we adapted slightly to our student population. In addition to the original items, we added eight items to assess perceptions specifically related to the IMPACT deck. The survey also included four open-ended response questions and a set of demographic items. This manuscript focuses on a portion of the selected student responses to the survey and two open-ended responses.

Data Analysis

We conducted descriptive statistics with the quantitative data and employed a qualitative coding strategy to analyse responses to the open-ended responses. Our qualitative approach followed an inductive content analysis method, with codes emerging directly from the data through iterative review (Elo & Kyngäs, 2008). In the initial phase, the research team collaboratively reviewed a subset of responses to construct a preliminary codebook for both open-ended responses.

The first question asked students to define empathy. The initial code set included twenty-three subcodes, which, when collapsed, seven main codes remained: caring, feelings, kindness, putting yourself in others' shoes, relating and connecting, understanding and not applicable (Table 1). Students' definitions of empathy are closely related to how others describe what it means to be empathetic.

Table 1
Codes and Subcodes for Empathy Defined

Main Codes	Sub Codes
Caring	Being kind; Being thoughtful; Caring about others; Caring for others; Forgiving; Helping others; Making friends
Feelings	Connecting with others; Extending grace; Feelings for others; Feelings of others
Kindness	Being kind; Being thoughtful; Connecting with others; Feelings of

	others; Showing compassion; Supporting others' experiences
<i>Putting yourself in others' shoes*</i>	<i>Putting yourself in others' shoes</i> ; Showing compassion; Taking perspectives
Relating and connecting	Caring for others; Relating to others
Understanding	Understanding; Understanding feelings: Understanding for others; Understanding of others; Understanding with others
Not Applicable	Did not include a definition or did not answer

*Italicized to show direct quote

The second open-ended question pertained to their overall impression of the IMPACT Deck. The first version included six codes: perspective taking, playfulness, peer interaction, personal development, tool focused, and general comments (Table 2).

Table 2
Qualitative Codes Applied with Definitions

Code	Definition
Perspective taking	Captured moments where students described thinking about or as someone else or listening to diverse experiences.
Playfulness	Encompassed notions of fun, imagination, or engagement (as defined above)
Peer interaction	Included social dynamics or collaborative aspects of gameplay
Personal development	Referenced learning, self-awareness, or the introduction of new ideas.
Tools*	Focused on responses about the mechanics, content, or presentation of the deck itself.
General comments*	Included vague or contextually ambiguous; statements that were either positive or negative, but lacked specificity

*Excluded from manuscript

Two researchers independently applied the initial codebook to a sample of responses using Microsoft Excel. We calculated interrater reliability using Cohen's Kappa coefficient (McHugh, 2012), which was too low to be acceptable ($k < .5$). After discussion, the codebook was revised for clarity and precision, and a second round of independent coding was conducted. The revised coding yielded a Kappa of 0.69, which, while improved, remained at the threshold of acceptable agreement (Landis & Koch, 1977). This prompted a final revision of the codebook, wherein we determined that only four of the original six codes (perspective taking, playfulness, peer interaction, and personal development) would be retained for this analysis. The final two codes, tool focused and general comments, were excluded from this manuscript as they pertained to a separate evaluation of the deck's design or usability and are reported for internal use elsewhere.

Positionality

We represent an interdisciplinary team, with varying philosophical perspectives and levels of training, including graduate level education and experience, and are from different cultural backgrounds. Specifically, we represent South Asian and North American cultures and norms around education which do not frequently include play or playful activities. Collectively, we believe that education is transformative when multiple voices are heard and value the development of activities dedicated to building global perspectives. We recognize our own privilege as being a highly trained and educated research group and that we consider ourselves to be empathetic persons. We believe that empathy is a critical skill for a kind, caring, and happy society and worry empathy development is currently challenged by the overuse of technology. We acknowledge that we all overuse technology at times, forgoing interpersonal relationships and missed opportunities to express empathy towards others.

Results

Demographics

We received 104 valid survey responses. More men than women (49% and 43% respectively) with few nonbinary (3%) students and those who did not answer (5%) responded to the survey. The sample includes mostly white students (51%), which is congruent with institutional demographic. More first-year students (43%) answered the survey than advanced standing students. Fewer students identified themselves as being low-income by federal Pell Grant status or as a first-generation student (Table 3).

Table 3
Student Characteristics by Percentage of Sample

Student Characteristic	Percentage of Sample (n=104)
Gender	
Man	49%
Woman	43%
Nonbinary	3%
Did not answer	5%
Race & Ethnicity	
Asian	20%
Black/African American	4%
Hispanic/LatinX	4%
International	1%
Native Hawaiian/Pacific Islander	1%
Unknown	1%
Two or More Races	6%
White	51%
Prefer not to disclose	3%
Did not answer	10%
Academic Standing	
0-24 credits or First year	43%
24.01-59 credits or Sophomore	12%

59.1-89 credits or Junior	16%
89.1 and more credits or Senior	22%
Did not answer	5%
Pell Grant Recipient	
Yes	11%
No	61%
I don't know	19%
Prefer not to disclose	4%
Did not answer	6%
First Generation	
Yes	11%
No	81%
Prefer not to disclose	1%
Did not answer	8%

Scaled Responses

The scaled responses utilized a Likert scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree). The higher the mean, the more empathy expressed according to the BES. The highest ranked items were *I can understand my friends' happiness when s/he/they do well at something* (4.45), *I can usually work out when people are cheerful* (4.19) and *I can usually realize quickly when a friend is angry* (4.18). The lowest ranked item was *Seeing a person who has been angered has no effect on my feelings* (3.29), followed by *I tend to feel scared when I am with friends who are afraid* (3.34) and *I get caught up in other people's feelings easily* (3.44). Overall, most of the responses were more neutral or leaning towards the positive which indicates more emotional empathy. In addition, we asked students to rate *I am an empathetic person* (4.3), indicating the students believe they are empathetic (Table 4).

Table 4
Scaled Responses, Including Cognitive and Emotional Sub-scales

Survey Item	Mean	Std. Dv.
Cognitive Subscale	35.69	4.22
I can understand my friend's happiness when s/he/they do well at something.	4.45	0.689
<i>I find it hard to know when my friends are frightened.</i>	3.62	1.017
When someone is feeling "down" I can usually understand how they feel.	3.98	0.742
I can usually work out when my friends are scared.	3.78	0.802
I can often understand how people are feeling even before they tell me.	3.88	0.76
I can usually work out when people are cheerful.	4.19	0.665
I can usually realize quickly when a friend is angry.	4.18	0.691
<i>I am not usually aware of my friend's feelings.</i>	3.77	1.067
<i>I have trouble figuring out when my friends are happy.</i>	3.85	1.063
Emotional subscale	38.35	5.927
<i>My friend's emotions don't affect me much.</i>	3.68	1.177

After being with a friend who is sad about something, I usually feel sad.	3.73	0.924
I get frightened when I watch characters in a good scary movie.	3.68	1.15
I get caught up in other people's feelings easily.	3.44	1.136
<i>I don't become sad when I see other people crying.</i>	3.46	1.137
<i>Other people's feelings don't bother me at all.</i>	3.9	1.015
I often become sad when watching sad things on TV or in films.	3.68	1.086
<i>Seeing a person who has been angered has no effect on my feelings.</i>	3.29	1.033
I tend to feel scared when I am with friends who are afraid.	3.34	0.991
I often get swept up in my friend's feelings.	3.38	0.997
<i>My friend's unhappiness doesn't make me feel anything.</i>	3.7	1.064
I am an empathetic person.	4.3	0.779

Items italicized are reverse coded. Instead of 1=strongly disagree and 5= strongly agree, reverse coded items uses 1=strongly agree and 5=strongly disagree so items align conceptually when analysed.

When calculated, the Emotional scale showed a mean of 38.35 (Min = 24, Max = 51) and Cognitive a mean of 35.19 (Min = 27, Max = 45). Inter-item reliability shows an acceptable level of agreement for the cognitive subscale (Cronbach's alpha = .716) and emotional subscale (Cronbach's alpha = .708). These results show students in the sample to have a slightly higher cognitive empathy than emotional empathy when measured by the BES.

Empathy Defined

We asked students how they define empathy. We received 86 written responses. Results show *understanding* was most frequently applied (25.58%), followed by *feelings* (18.6%), *putting yourself in others' shoes* and *caring* (17.44%, respectively), *kindness* (10.47%), and *relating and connecting* (8.14%) (Table 6). These statements of self-understanding show defining empathy can be difficult (Wispé, 1986) and carry a relational aspect between the self and others (Bollen, 2023). The codes show students thinking beyond their selves when describing what empathy means to them.

Table 6
Coding Frequency for Empathy Definition

Codes	Sub Codes	Frequency Count	Percentage of Sample (n=86)
Caring	Being kind; Being thoughtful; Caring about others; Caring for others; Forgiving; Helping others; Making friends	15	17.44%
Feelings	Connecting with others; Extending grace; Feelings for	16	18.60%

	others; Feelings of others		
Kindness	Being kind; Being thoughtful; Connecting with others; Feelings of others; Showing compassion; Supporting others' experiences	9	10.47%
<i>Putting yourself in others' shoes</i>	<i>Putting yourself in others' shoes</i> ; Showing compassion; Taking perspectives	15	17.44%
Relating and connecting	Caring for others; Relating to others	7	8.14%
Understanding	Understanding; Understanding feelings; Understanding for others; Understanding of others; Understanding with others	22	25.58%
Not Applicable		2	2.33%

When combined with the scaled responses, students' definitions of empathy connects to the scaled responses of the cognitive empathy subscale, in which a person understands how another person feels in specific situations (Carré et al., 2013).

IMPACT Deck Responses

Importantly, students in this study agreed *it's important to learn about diverse populations* (4.45). Students felt mostly neutral about whether the deck *helped me have hard conversations with others about diverse issues or concepts* (3.53), *learned something new about my peers from conversations while using the IMPACT Deck* (3.81), and *learned something new about myself (e.g. how I think, my world views)* (3.31). Overall, they agreed that the deck *helped me learn about technology in a playful manner* (4.06). (Table 5), showing a positive reaction to the use of play.

Table 5

Survey Items Related to the IMPACT Deck Tool

Survey Item	N	Min.	Max.	Mean	Std. Dv.
The IMPACT Deck helped me learn about technology in a playful manner.*	82	1	5	4.06	0.921
I learned something new about myself (e.g. how I think, my world views).	99	1	5	3.31	1.075
I learned something new about my peers from conversations while using the IMPACT Deck.	99	2	5	3.81	0.817
It's important to me to learn about diverse populations while in college.*	82	1	5	4.45	0.705
IMPACT helped me have hard conversations with others about diverse issues or concepts.	99	1	5	3.53	1.082

* Item not asked during the summer semester

Correlational analyses examined the relationships between the Emotional and Cognitive subscales and four responses related to the IMPACT Deck. The Emotional subscale was positively and significantly correlated with the following responses: *I learned something new about myself* ($r = .38, p < .05$), *I learned something new about my peers from conversations while using the IMPACT Deck* ($r = .26, p < .05$), and *IMPACT helped me have hard conversations with others about diverse issues or concepts* ($r = .22, p = .029$). The Cognitive subscale was also positively and significantly correlated with *I learned something new about myself* ($r = .24, p < .05$). These results suggest that emotional and cognitive empathy and personal growth, learning about others, and navigating difficult conversations, are positively and significantly linked. The deck appears to mediate conversations that allowed for students to reflect on their own feelings and those of others, a critical component to the development of empathy (Bollen, 2024).

Overall Impressions

We asked the students to describe their overall impressions about the deck and received 75 written responses. Some statements were segmented to capture more than one impression. Students shared about the deck were focused on perspective-taking ($n=34$), followed by playfulness ($n=31$) (Table 6). Peer interactions ($n=27$) and personal development ($n=23$) were less frequently coded. When taken together, students found the deck to be a playful way to learn about new perspectives, talk with their classmates, and develop personally. These outcomes can connect back to empathy development, as outlined or prescribed by Bollen's (2024) framework for how mediating tools, like the deck, can support students' interactions with others.

Table 6
Frequency of Codes Applied to Overall Impressions

Codes	Frequency Count	Percentage of Sample (n=75)
Perspective taking	34	45.3%
Playfulness	31	41.3%
Peer interaction	27	36%
Personal development	23	30.6%

Discussion

Students' definition of empathy showed signs of cognitive empathy, in that they were able to think about others generally, without knowing or having a circumstance (Carré et al., 2013). Their definition of what empathy meant used words such as *of* and *for* to locate the self to the others' feelings, experiences, or situations. As Davis (1990) writes, the "crossing over" effect takes place in which the self identifies with the other, such as *putting yourself in one's shoes*, but then comes back to the self. When students defined empathy as *understanding* or *feeling* were expressing an internal process by which they come to terms with what is being shared by the other. The emotional empathy subscale results indicate that emotional empathy might be a little harder or less natural for the students in this study. However, this finding should not be taken as a slight or critique of the students.

Empathy is not always beneficial or positive. Breithaup and Hamilton (2019) explores the dark side of empathy,

highlighting that the empathizer can lose themselves in others' experiences or exploit the empathizee through ego, pain, or even "vampiristic" practices. Accordingly, some of the lower (albeit still central or neutral feelings) seen in the data should not be considered negative. Rather, the middle-of-the range empathy is likely to protect the self from extending too much empathy at the risk of their own detriment. The deck created a safe learning environment, and with low stakes, and allowed students to use their imagination and creativity to challenge societal norms. They were able to take different perspectives, interact with their peers, and learn about themselves, touching on three dimensions of empathy development of skills, norms, and interconnectivity (Bollen, 2024). Here, the slightly higher cognitive empathy shown is a benefit to the students, so that the self is not consumed by another (Segal, 2011, 2014). Our data suggest that students have a mid-range level of empathy and show some boundary setting to ensure their empathy is not self-destructive, even if they self-reported a belief of a high level of empathy.

Teenagers, like traditional aged college students, need help through organized structures around developing empathy (Kim et al., 2020). Tools designed to support communication opportunities for students in low-stake, game-like play, is one way to offer that structured opportunity. Play opens the student experience by "creating opportunities for all people to engage equitably" and in their own ways (Whitton, 2022, p. 165). While students thought this deck was *fun* and *playful*, a single time use of the cards is unlikely to make a change in students' level or expression of empathy. Still, using play to help structure hard conversations or increase student engagement and develop interpersonal relationships was useful and could be more influential if used as a long-term approach. Students learned something new about their peers, which is critical as digital technology can limit our understanding of others and contribute to a dehumanized society. More importantly, the students said they learned things about themselves and others through structured conversations and playful approaches.

Bollen (2024) suggests that mediating technologies contribute to the environment in which empathy can develop, especially at the micro-level. The macro-level of empathy development was not evident in our data beyond students' responses of *putting yourself in one's shoes*. Nevertheless, the experience shared between students was valuable and could be a contributor to overall student success (see Strayhorn, 2008), even if a larger societal-level (macro-level) of empathy was not reached with this tool. The deck and table-games like it can serve as a mediating tool to help bridge relationships and offer students meaningful interactions in a safe environment.

Implications

The implications of how technology is shaping the social development of college students differently than in prior cohorts is becoming a larger topic in higher education. Specifically, artificial intelligences are uncovering students' ethical reasonings of technology use and calling into question core values, like of human flourishing, honesty, equity, and empathy. Empathy, when understood as a virtue, is not a static skill but rather one that can be developed. Embedding ethics and values into a classroom context with formal interventions reinforces individual student development while showing how learning environments can strengthen interpersonal relationships and contribute to a more human-centred technological future. Teaching skills and values like empathy align with higher education's mission to create a more just and fair society and supports students' personal and professional successes.

While higher education continues to push towards techno-oriented solutions, this study serves as a reminder that non-digital solutions are available and effective to help build durable skills. Our data demonstrate that an

analogue tool, like the deck, can be used to support empathy development, potentially serving as a counteraction to the overuse and negative effects of technology that impede or change students' ability to develop empathy. GenZ students prefer to spend their time on smartphones and in online spaces and have delayed social development likely from the COVID-19 pandemic (Iarovici, 2024). In this context, effective communication, active listening practices, and understanding other perspectives are especially important. These are long-lasting and transferable skills that will need to be applied across different careers and contexts, yet can be supported through simple and meaningful pedagogical strategies. At the very least, this simple deck of cards gives students a reason to put down their phones and talk with a classmate in a playful manner.

Play further encourages collaboration and supports creative problem-solving, which require a certain level of understanding others' experiences and perspectives. The deck of cards used in this study had no rules or any real gameplay (i.e. winners and losers). Instead, it focused on facilitating the communication between students through perspective taking, imagination, and role-play which decreased barriers or fear associated with the interactions. The game-based play design of the deck supports the one-on-one interaction that empathy development warrants (Bollen, 2024). Play in college can help with student development while maintaining academic rigor and quality learning outcomes, and help meet the demands of the industry market for durable skills. Future iterations of the deck could include more design decisions that deepen empathy development by including elements that challenge normative behaviours, employ students' definitions of empathy to the conversation, and engage larger society issues to reach a higher level of empathic development and expression.

Limitations

This study has several limitations. First, our sample is bound by those who volunteered to participate. For anonymity purposes, we did not ask students which class they were in, and as such, we have no way to determine the sample population for sample representation. The small sample size limited our ability to see if empathy, as measured by the BES, and the students' academic discipline had any relationship. Additionally, the self-reported BES scores and self-perceived levels of empathy were not fully explored but could be reconciled in future research. Second, the study was limited to a single location, and results of a similar study may not be the same when conducted with other instructors, students, institutional culture, or any number of different demographic characteristics. Instructors can use the deck in a variety of ways, so students' experiences can be different depending on how the instructor frames the tool. As the deck is not inherently rule-based, different student experiences likely exist depending on the instructions, purpose, and use. More research should be done to see if and how the instructor sets the stage for tools like the deck might change the students' empathy development or their interactions with others. For example, a research study that uses the deck in such a way that creates specific objectives which lead to a higher level of involvement and actual role-playing, (Greco, 2009), like a business game might change the students' experiences. Third, the IMPACT Deck is a newer educational tool, and though available as an application for mobile devices, it is relatively limited in use which restricts future research potential by other scholars.ⁱ Although most use of the deck is done in person, some students in this sample may have used the online version and thus had a different experience with interpersonal communication practices. Finally, the data are self-reported about a concept that is hard to measure (see Wispé, 1986). Our study did not measure if students' empathy increased, decreased, or stayed the same before and after the deck experience. More research could expand on different ways to measure student change and personal growth, such as longitudinal studies with constant use and reflection of the deck, in a more structured environment and with a shared and communicated understanding of the empathy.

Conclusion

Technology changes all aspects of our social and cultural lives and contributes to a formation of empathy. To live in a supportive, kind, and caring society, individual empathy is not enough. Nor is it enough to hope that students will develop empathy on their own. Instead, educators must make opportunities for empathy to be taught in the classroom (Segal, 2011). They can help address the systemic issues of technology overuse and unintentional loss of empathy development contemporary college students face by using a tabletop game for creative role-playing. Tools, like the deck in this study, can provide a structured conversation for students to learn about themselves and others and gave students a low-stakes, safe, and playful activity to explore others' experiences and ideas.

References

- Bollen, C. (2023). Towards a clear and fair conceptualization of empathy. *Social Epistemology*, 37(5), 637–655. <https://doi.org/10.1080/02691728.2023.2227963>
- Bollen, C. (2024). A conceptual and ethical framework for empathy and communication technologies. *Technology in Society*, 79, 1–9. <https://doi.org/10.1016/j.techsoc.2024.102707>
- Breithaupt, F., & Hamilton, A. B. B. (2019). *The dark sides of empathy*. Cornell University Press. <https://doi.org/10.7591/9781501735608>
- Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Longman.
- Burenkova, O. M., Arkhipova, I. V., Semenov, S. A., & Samarenkina, S. Z. (2015). Motivation within Role-Playing as a Means to Intensify College Students' Educational Activity. *International Education Studies*, 8(6), 211-216. <https://doi.org/10.5539/ies.v8n6p211>
- Cameron, C. D., Hutcherson, C. A., Ferguson, A. M., Scheffer, J. A., Hadjiandreou, E., & Inzlicht, M. (2019). Empathy is hard work: People choose to avoid empathy because of its cognitive costs. *Journal of Experimental Psychology: General*, 148(6), 962–976. <https://doi.org/10.1037/xge0000595>
- Carr, N. (2025). *Superbloom: How technologies of connection tear us apart*. W.W. Norton & Company.
- Cytowic, R. (2024). *Your stone aged brain in the screen age*. The MIT Press.
- Davis, C. M. (1990). What Is Empathy, and Can Empathy Be Taught? *Physical Therapy*, 70(11), 707–711. <https://doi.org/10.1093/ptj/70.11.707>
- Egbert, N., Miraldi, L. B., & Murniadi, K. (2014). Friends Don't Let Friends Suffer From Depression: How Threat, Efficacy, Knowledge, and Empathy Relate to College Students'; Intentions to Intervene on Behalf of a Depressed Friend. *Journal of Health Communication*, 19(4), 460–477. <https://doi.org/10.1080/10810730.2013.821554>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-

115. doi: 10.1111/j.1365-2648.2007.04569.x

- Forbes, L. (2021). The Process of Playful Learning in Higher Education: A Phenomenological Study. *Journal of Teaching and Learning*, 15(1), 57–73. <https://doi.org/10.22329/jtl.v15i1.6515>
- Forbes, L. K., & Thomas, D. (Eds.). (2022). *Professors at play playbook*. Carnegie Mellon University; ETC Press.
- Gray, P. (2017). What Exactly Is Play, and Why Is It Such a Powerful Vehicle for Learning? *Topics in Language Disorders*, 37(3), 217–228. <https://doi.org/10.1097/TLD.0000000000000130>
- Greco, M. (2009). The Use of Role-Playing in Learning. In T. Connolly, M. Stansfield, & L. Boyle (Eds.), *Games-Based Learning Advancements for Multi-Sensory Human Computer Interfaces* (pp. 157–173). IGI Global. <https://doi.org/10.4018/978-1-60566-360-9.ch010>
- Holzman, L. (2010). Without Creating ZPD There Is No Creativity. In M. C. Connery, V. John-Steiner, & A. Marjanovic-Shane (Eds.), *Vygotsky and Creativity: A Cultural-historical Approach to Play, Meaning Making, and the Arts* (pp. 27–39). Peter Lange.
- Howe, D. (2012). *Empathy: What is it and why it matters*. Bloomsbury Publishing.
- Huang, C., Wu, Z., Sha, S., Liu, C., Yang, L., Jiang, P., Zhang, H., & Yang, C. (2025). The Dark Side of Empathy: The Role of Excessive Affective Empathy in Mental Health Disorders. *Biological Psychiatry*, 98(5), 404–415. <https://doi.org/10.1016/j.biopsych.2024.12.020>
- Igor, C., Douglass, J., & Thomson, G. (2025). *The Multi-Engagement Model: Understanding Diverse Pathways to Student Success at Research Universities* (Student Experience in the Research University (SERU), pp. 1–151). University of California Berkeley.: Center for Studies in Higher Education. <https://escholarship.org/uc/item/3c27q1kd>
- Inside Higher Ed, & generation lab. (2024). *Student Voice: Annual Survey*. <https://data.generationlab.org/InsideHigherEd/AnnualSurvey.html>
- Iarovici, D. (2024). *Coping on campus*. Johns Hopkins University Press.
- James, C., Davis, K., Charmaraman, L., Konrath, S., Slovak, P., Weinstein, E., & Yarosh, L. (2017). Digital Life and Youth Well-being, Social Connectedness, Empathy, and Narcissism. *Pediatrics*, 140(Supplement_2), S71–S75. <https://doi.org/10.1542/peds.2016-1758F>
- Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence*, 29(4), 589–611. <https://doi.org/10.1016/j.adolescence.2005.08.010>
- Kim, E. J., Son, J.-W., Park, S. K., Chung, S., Ghim, H.-R., Lee, S., Lee, S.-I., Shin, C.-J., Kim, S., Ju, G., Park, H., & Lee, J. (2020). Cognitive and Emotional Empathy in Young Adolescents: An fMRI Study. *Journal of the Korean Academy of Child and Adolescent Psychiatry*, 31(3), 121–130. <https://doi.org/10.5765/jkacap.200020>
- Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in Dispositional Empathy in American College Students Over Time: A Meta-Analysis. *Personality and Social Psychology Review*, 15(2), 180–198.

<https://doi.org/10.1177/1088868310377395>

- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174. <https://doi.org/10.2307/2529310>
- McGregor, J. (1993). Effectiveness of Role Playing and Antiracist Teaching in Reducing Student Prejudice. *The Journal of Educational Research*, 86(4), 215–226. <https://doi.org/10.1080/00220671.1993.9941833>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22(3), 276–282. <https://doi.org/10.11613/BM.2012.031>
- Mowreader, A. (2025, July 31). Psychology Course Encourages College Students to Make Friends. *Inside Higher Ed*. <https://www.insidehighered.com/news/student-success/health-wellness/2025/07/31/psychology-course-encourages-college-students-make> or using a URL shortener as encouraged by APA 7th.
- National Survey of Student Engagement. (2024). *Engagement indicators*. <https://nsse.indiana.edu/nsse/survey-instruments/engagement-indicators.html>
- Nørgård, R. T., Toft-Nielsen, C., & Whitton, N. (2017). Playful learning in higher education: developing a signature pedagogy. *International Journal of Play*, 6(3), 272–282. <https://doi.org/10.1080/21594937.2017.1382997>
- Olsen, L. D., & Gebremariam, H. (2022). Disciplining empathy: Differences in empathy with U.S. medical students by college major. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 26(4), 475–494. <https://doi.org/10.1177/1363459320967055>
- Parson, L. (2025). *Understanding and Supporting College Students with Empathy: A Guide for Higher Education Practitioners*. Routledge. <https://doi.org/10.4324/9781003415923>
- Pathsmith. (2024). *Durable skills. America succeeds*. <https://www.pathsmith.org/>
- Peifer, J. S., & Taasobshirazi, G. (2022). College Students' Reduced Cognitive Empathy and Increased Anxiety and Depression before and during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 19(18), 11330. <https://doi.org/10.3390/ijerph191811330>
- Pendakur, S., Quaye, S., & Harper, S. (2020). The heart of our work. In S. Quaye, S. Harper, & S. Pendakur (Eds.), *Student Engagement in Higher Education: Theoretical Perspectives and Practical Approaches for Diverse Populations* (3rd ed.). Routledge.
- Pew Research Center. (2025). *Teens and Internet, Device Access Fact Sheet*. <https://www.pewresearch.org/internet/fact-sheet/teens-and-internet-device-access-fact-sheet/>
- Prager, R. H. P. (2019). *Exploring the Use of Role-playing Games in Education*. 2, 1-8. <https://mtrj.library.utoronto.ca/index.php/mtrj/article/view/29606/25764>
- Segal, E. A. (2011). Social Empathy: A Model Built on Empathy, Contextual Understanding, and Social

Responsibility That Promotes Social Justice. *Journal of Social Service Research*, 37(3), 266-277.
<https://doi.org/10.1080/01488376.2011.564040>

Segal, E. A. (2014). Social Empathy. In E. A. Segal, *Encyclopedia of Social Work*. NASW Press;Oxford University Press. <https://doi.org/10.1093/acrefore/9780199975839.013.1152>

Stevens, R. (2015). Role-play and student engagement: Reflections from the classroom. *Teaching in Higher Education*, 20(5), 481–492. <https://doi.org/10.1080/13562517.2015.1020778>

Strayhorn, T. L. (2008). How College Students' Engagement Affects Personal and Social Learning Outcomes. *Journal of College and Character*, 10(2), 1-16. <https://doi.org/10.2202/1940-1639.1071>

Togsverd, L., & Pedersen, O. (2025). We prefer students to be creative and developing things themselves—narratives of student engagement when learning becomes playful. *Scandinavian Journal of Educational Research*, 69(3), 466-477. <https://doi.org/10.1080/00313831.2024.2317736>

Vrečer, N. (2015). Empathy in Adult Education. *Andragoška Spoznanja*, 21(3), 65–73.
<https://doi.org/10.4312/as.21.3.65-73>

Whitton, N. (2022). *Play and Learning in Adulthood*. Palgrave Macmillian. <https://doi.org/10.4324/9781351021869-2>

Wilson, J. C. (2011). Service-learning and the development of empathy in US college students. *Education + Training*, 53(2/3), 207–217. <https://doi.org/10.1108/00400911111115735>

Wispé, L. (1986). The distinction between sympathy and empathy: To call forth a concept, a word is needed. *Journal of Personality and Social Psychology*, 50(2), 314-31. <https://doi.org/10.1037/0022-3514.50.2.314>

Zhou, Z. (2022). Empathy in education: A critical review. *International Journal of the Scholarship of Teaching and Learning*, 16(3), Article 2. <https://digitalcommons.georgiasouthern.edu/ij-sotl/vol16/iss3/2/>

Note: The tool is available to download for free at <https://impactdeck.psu.edu/>