Re-framing Accessibility from Constraint to Creative Catalyst

Sarah Andrew
Department of Computing and Information Sciences Ph.D
Rochester Institute of Technology
Rochester, New York, USA
sa2941@rit.edu

Anisa Callis
School of Information
Rochester Institute of Technology
Rochester, New York, USA
amc1672@rit.edu

Anne Spencer Ross
Department of Computer Science
Bucknell University
Lewisburg, Pennsylvania, USA
a.ross@bucknell.edu

Garreth W. Tigwell
School of Information
Rochester Institute of Technology
Rochester, New York, USA
garreth.w.tigwell@rit.edu

Abstract

We surveyed 70 mobile app creators (34 professionals and 36 students learning mobile app creation) to understand their perceptions toward creativity and accessibility. We found mobile app creators who treated design constraints as creative constraints naturally included accessibility, but those with the freedom of unrestricted aesthetic design often disregarded accessibility. Our research suggests that we can change negative perceptions toward accessible design by making it an integrated part of the creative process.

CCS Concepts

• **Human-centered computing** → **Accessibility**.

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1 Introduction & Related Work

Given the popularity of mobile apps [3, 5], accessibility should be an integral part of their design [9]. However, apps have many accessibility issues [1, 10, 17, 24]. Many factors contribute to whether app creators consider accessibility [18]. Some designers and developers view accessibility as disruptive to their creative process [22, 23], when instead they should see this as a creative opportunity [14, 16]. Creativity takes many forms [4, 8], and it permeates throughout the design process [11, 20]; this is how accessibility should also be treated. Therefore, our long-term goal is to reconcile accessible design and creativity tensions, so accessibility is viewed as a positive constraint that spurs creative design.

This study is the first part of our plan to develop: *Creative Accessibility Design Tools* (CADTs). CADTs aim to support app creators in meeting accessible and aesthetic goals throughout the design process. We hope to help mobile app creators view accessibility as an engaging part of the creative process.

In this paper, we report on a survey with 70 mobile app creators (34 professionals and 36 students) to understand their views on accessibility and creativity. We chose to focus on both user groups, since accessibility education is currently limited [2, 13, 19], and we believe CADTs can not only support professional, but also double as an educational resource, so understanding student perspectives is important. Our research questions were: *How do mobile app creators experience creativity and view it in relation to accessibility?* and *How do these perspectives differ between professionals and students?*

2 Method

Material and Procedure. For our IRB-approved study, we developed an online survey using Qualtrics to investigate designers' relationship between creativity and accessibility in mobile app design. Using the survey, we collected data on participants' demographics and experiences (age, gender, years designing, company size, platform focus), creativity conceptualization through the open-ended question "How would you define creativity when designing mobile apps?", creativity ratings across six design phases and thirteen activities using Likert scales, the accessibility-creativity relationship using a 5-point scale from complementary to contrasting, and support needs through "What would help you incorporate accessibility while maintaining creativity?" All questions were optional and participants had a chance at cash raffle prizes ($30 for professionals, $15 for students). We designed our survey to take 10 to 15 minutes to complete. Full questionnaire details are available in supplementary materials.

Data Cleaning. We received 98 responses (43 students, 55 professionals). We removed participants with substantially incomplete responses (50%+ questions blank) and participants who did not meet inclusion criteria (e.g., not currently creating mobile apps). We also screened for potential automated responses by examining response patterns, timing, and answer quality, though we retained responses where we could not definitively confirm non-human participation, which is a growing concern in HCI [12]. Our final sample was 70 participants (34 professionals, 36 students) for analysis.

Participants. *Industry Professionals (n=34):* We recruited through professional design communities on LinkedIn, Reddit, and forums. The survey was open February-April 2025. Professional

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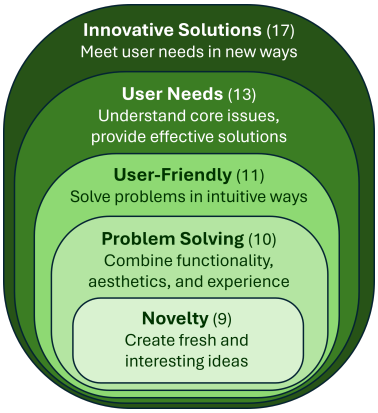

Figure 1: Participants' view of creativity.

experience in mobile app design ranged from 3 months to 14 years. Age ranged from 20-51 years old among 19 men, 14 women, and one person who did not disclose their gender. Employment contexts included small companies with 50 or fewer employees (19), large companies (14), freelancers (13), and hobbyists (8). Nine participants also selected "other" but only P32 expanded to say "Personal side projects." For platforms they create apps for, 31 participants worked on Android, 28 on iOS, and two other (P1 clarified web-based apps).

University Students (n=36) studying mobile design in their degree program: We recruited through student communities on LinkedIn, Facebook, and Reddit, and outreach to university design programs. The survey was open April-June 2025. Participants ages ranged from 18-40 years old among 19 men, 16 women, and one person who did not disclose their gender. Experience with mobile app design ranged from 2 months to 7 years, with 30 undergraduate and six graduate students. Primary platforms were 25 Android, 20 iOS, and 3 other, including web-based apps.

Analysis. We used descriptive statistics to analyze quantitative data on demographics, tool usage, and views on accessibility. We used reflexive thematic analysis [6, 7] for open-ended questions. The first author reviewed all responses and created initial codes. The first and second authors then collaboratively developed codes through discussions. They then combined codes into higher-level themes and identified patterns connected to the research question.

3 Findings

3.1 Creativity Conceptualization

Figure 1 provides an overview of our participants' core concepts of creativity.[1] However, our analysis revealed group differences in the conceptualization of creativity and how integration of accessibility was affected. Both groups placed high importance on creativity, but professionals defined it as structured problem-solving within constraints, whereas students focused on visual innovation and aesthetic expression.

Professionals defined creativity as productive work within constraints. They saw user requirements, business needs, and technical restrictions as creative catalysts instead of obstacles to it, e.g., P1 said "*Creativity is in how you solve the problem. What do the users want, what does the business need.*" Students expressed their creativity through visual experimentation and creating original aesthetic designs, e.g., S25 "*Doing things you may not have been seen before...Unique layouts and user interactions.*"

We noticed how different groups ranked the value of creative expression in their work. The professionals demonstrated 91.18% prioritization (41.18% high, 50% moderate), which showed they kept creative values while handling other project requirements, while students placed creativity as their top priority, with 100% of them reporting high or moderate prioritization (50% high, 50% moderate).

Both groups were asked to rate their creativity during the following design phases: problem definition, idea generation, idea selection, implementation, testing, and mobile app refinement (See Figure 2). The highest creative levels appeared during design exploration and sketching activities for both groups, yet the continuous use of accessible design guidelines produced the lowest creative results. The combination of real-world professional constraints with diverse viewpoints from non-design team members proved more creative for professionals than students, according to our findings.

The participants from both groups rated following guidelines as their least creative activity during design. However, participants rated exploratory activities (sketching and ideation) and problem-solving activities (low-fidelity prototyping and testing) under other constraints as moderate to high creativity. Our findings revealed a conflict because mobile app creators viewed rule compliance as uncreative, yet they found creative value in working with design constraints. The distinction emerged from how mobile app creators viewed these elements, since guidelines appeared confining, yet design constraints appeared to create opportunities. The way mobile app creators' approached inclusive design changes when accessibility moves from guideline compliance to challenge resolution (more details are reported in Figure 3 in Appendix A).

Our findings about creativity and accessibility perceptions showed an unexpected relationship, which indicates how beliefs about creativity affect accessibility integration. Among those who responded, 75% of students (27/36) viewed accessibility as complementary or somewhat complementary to creativity, compared to 58.8% of professionals (20/34) (full details are reported in Table 1).

3.2 Creativity Conceptualization's Influence on Accessibility Implementation

How participants conceptualized creativity influenced how they integrated accessibility in design. Despite professionals defining creativity as problem-solving within constraints, they were less likely than students to view accessibility as complementary to creativity, suggesting the professional experience gave more insights into accessibility challenges.

However, professionals who did embrace accessibility framed it as an innovative opportunity, e.g.,

> "*Many designers see accessibility as a set of rules that restrict creativity, but I view it as a challenge that pushes creativity further. When we design with inclusivity in mind, we are forced to think beyond conventional solutions, leading to more innovative, engaging, and user-friendly designs.*" P27

[1] Our interest in exploring concepts of creativity and presenting the data in concentric layers was inspired by prior work on the core concepts of accessibility [15]

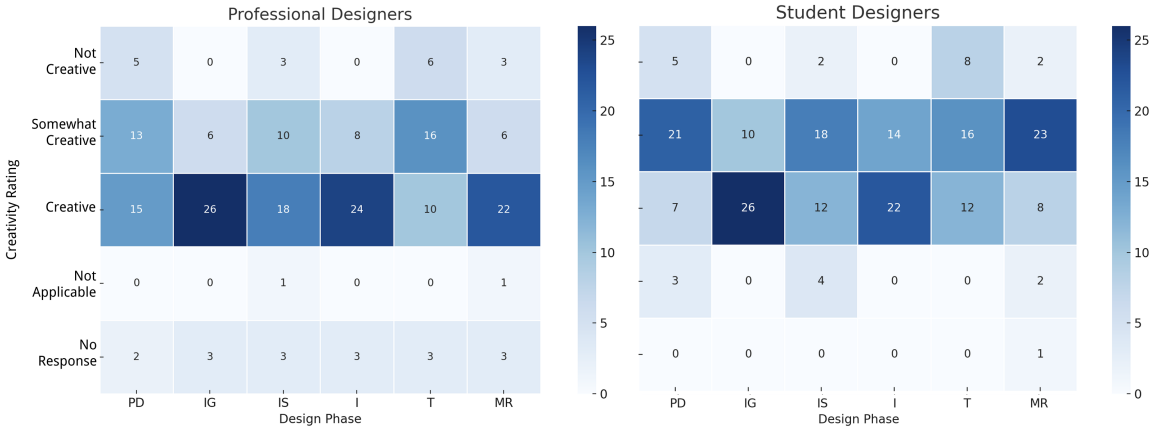

Figure 2: Professional and student creativity rating in each phase: Problem definition (PD), Idea generation (IG), Idea selection (IS), Implementation (I), Testing (T), and Mobile app refinement(MR).

Table 1: Participants' views on accessibility and creativity as complementary or contrasting goals

Accessibility and Creativity Views	Students	Percentage	Professionals	Percentage
Complementary (accessibility enhances creativity)	14	38.9%	15	44.1%
Somewhat complementary	13	36.1%	5	14.7%
Neutral / It depends	6	16.7%	8	23.5%
Somewhat contrasting	1	2.8%	2	5.9%
Contrasting (accessibility limits creativity)	1	2.8%	3	8.8%
No response	1	2.8%	1	2.9%

*Percentages calculated from total participants (n=36 students, n=34 professionals)

While 75% of students viewed accessibility as complementary to creativity, individual responses revealed nuanced perspectives. For example, S7 said "*Accessibility has some specific guidelines and goals as defined by the W11y [a11y] which naturally opposes the free-flowing nature of creativity*," highlighting the tension some perceive between structured guidelines and creative freedom.

These findings indicate that theoretical support for accessibility is higher among students, but practical experience can either result in enhanced their appreciation for accessibility as a creative tool or the creator is made more aware of challenges that can be experienced during implementation.

3.3 Conceptualization-Specific Needs

We identified user needs for better accessibility implementation in the design process. The professionals emphasized the need for organizational support through stakeholder approval and implementation frameworks. Students emphasized needing technological solutions that could integrate accessibility without interfering with their visual design process.

Professionals with problem-solving conceptualization emphasized organizational and strategic support, with 27 mentioning guidelines and six mentioning organizational needs, e.g., P11 said, "*Stakeholder buy-in; tools that incorporate accessibility into them in a way that doesn't feel disruptive.*" Whereas, students with aesthetic-focused conceptualization prioritized technological solutions that seamlessly integrate accessibility, with 13 mentioning integrated tool support, e.g., S2 said, "*Tools within platforms like Figma that automatically adjust things like font size or color, or at least provide recommendations to do so*" The difference in needs highlights how different conceptualizations of creativity influence both design methods and the support that each group believes is essential for effective accessibility implementation.

3.4 Re-framing Accessibility

Mobile app creators who viewed accessibility as a creative constraint instead of an obstacle developed stronger positive connections between creativity and accessibility implementation. Some professionals and students demonstrated through their work how re-framing accessibility from a constraint into a creative challenge affected their design process.

The professionals demonstrated a nuanced understanding of accessibility as adding creative constraints, e.g., P6 said, "*Accessibility considerations add a layer of considerations. Though not a constraint, its still a guard rail to follow. That adds to creative problems to solve.*" For students, they started to see accessibility as a creativity catalyst, e.g., S22 said, "*Often when you have to consider what others require to use your application, you are forced to find interesting ways to adapt without compromising the application's quality.*"

Our findings suggest that design curricula could teach constraint-based creativity methods alongside accessibility education, while

professionals could reframe their thinking toward accessibility as a creative possibility instead of a mandatory rule.

3.5 Understanding Group Differences

We suspect students tend to be more optimistic about accessibility-creativity integration (75% vs. 58.8%) because they have had fewer practical experiences. Real-world constraints including tight deadlines, working with legacy systems, and stakeholder resistance reduced the enthusiasm of professionals. Academic institutions teach inclusive design principles as fundamental curriculum content yet industry settings focus on market differentiation and fast deployment, which creates conflicts with accessibility requirements. Professionals define creativity through constraints yet they have a less favorable view of accessibility compared to students. The observed paradox indicates that work experience may not naturally lead to accessibility becoming creative potential without proper organizational backing and better tools to connect these concepts.

4 Discussion

The relationship between how mobile app creators define creativity fundamentally shapes whether they view accessibility as an opportunity or a challenge. Our findings reveal complementary perspectives from students and professionals that together can inform CADT development. While the majority of responding students (75%, n=27/36) and professionals (58.8%, n=20/34) view accessibility and creativity as complementary, mobile apps remain inaccessible [1, 10, 17, 24]. Rather than opposing viewpoints, students offer optimism about accessibility's creative potential while professionals provide pragmatic insights about implementation barriers that the accessibility community must address.

Several tensions in our findings help to explain this. First, while mobile app creators express their support for accessibility in principle, they consistently rate following guidelines as the least creative activity in their process. Our findings with mobile app creators align with previous research demonstrating how designers viewed accessibility guidelines as being difficult to use [21]. Even mobile app creators who intellectually support accessibility may struggle when the implementation process feels contradictory to their creative identity. Second, professionals who have real-world experience with accessibility constraints show less optimism about the accessibility-creativity relationship than students (58.8% versus 75% viewing accessibility as complementary to creativity), suggesting that practical implementation challenges may influence initial positive attitudes. Therefore, in addition to a mindset transformation, organizations need to implement both structural changes and tool-based modifications.

How participants defined creativity helps explain why some mobile app creators successfully integrate accessibility while others struggle. Students with aesthetic-focused creativity views see accessibility requirements as limiting their visual exploration, while professionals with problem-solving orientations view accessibility as another design challenge to solve creatively. However, even among professionals who embrace constraint-based creativity, organizational barriers and stakeholder resistance can still prevent successful implementation.

5 Limitations and Future Work

Our research provides initial insights into understanding mobile app creators' perceptions of accessibility and creativity. Our work has focused on reporting results from descriptive statistics and the findings of our qualitative analysis. Future research could extend our work by conducting more inferential testing to identify where statistical difference may be found.

We lack detailed information about where students are studying and curricula details. Similarly, for the professionals we do not have the full history of their education and training. This limits our ability to contextualize the observed differences.

Finally, surveying limits our ability to explore the differences between participants' understanding and actual design practices. Future work could use mixed-methods to combine our survey data with behavioral observations, interviews, or design tasks.

6 Conclusion and Recommendations

We surveyed 70 mobile app creators (34 professionals and 36 students) to understand how they experience creativity and view it in relation to accessibility, as well as how perspectives between the two groups differ. The student perspective shows that accessibility can be seen as creative when properly framed while the professional perspective shows that practical support is needed for implementation. Based on our findings, we see promise in the implementation of constraint-based creativity methods that help to establish accessibility as a key part of the creative design process.

Specifically, we recommend that the accessibility and HCI communities consider this mindset shift when developing new guidelines and design tools for accessible design. For example, if we consider WebAIM's color contrast checker (https://webaim.org/resources/contrastchecker/), where users can only compare two colors, then the tool is primarily for compliance verification rather than creativity. Prior work has demonstrated that it is possible to develop tools that balance accessibility with creativity (e.g., exploring the accessibility of a color palette of multiple colors at one [22]), and we want to see more of this. Design challenges should develop creative, accessible solutions. To aid digital creators in achieving this, the tool they use should have accessibility feedback integration so it is a natural part of the creative workflow, and accessibility documentation and guidelines should also present instructions as creative possibilities.

Second, we recommend that educational programs integrate accessibility within constraint-based creativity frameworks rather than teaching it as a separate focus on rules and compliance. Professional environments also need organizational support to educate creator perspectives to that accessibility is viewed as a business-driven design opportunity rather than a regulatory obligation.

Therefore, future accessibility resources that integrate creative freedom with compliance standards will enable app creators to maintain creative workflows while producing inclusive designs. We plan to develop CADTs that incorporate both the aspirational and practical framing that resonates with students and professionals.

Acknowledgments

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A Appendix

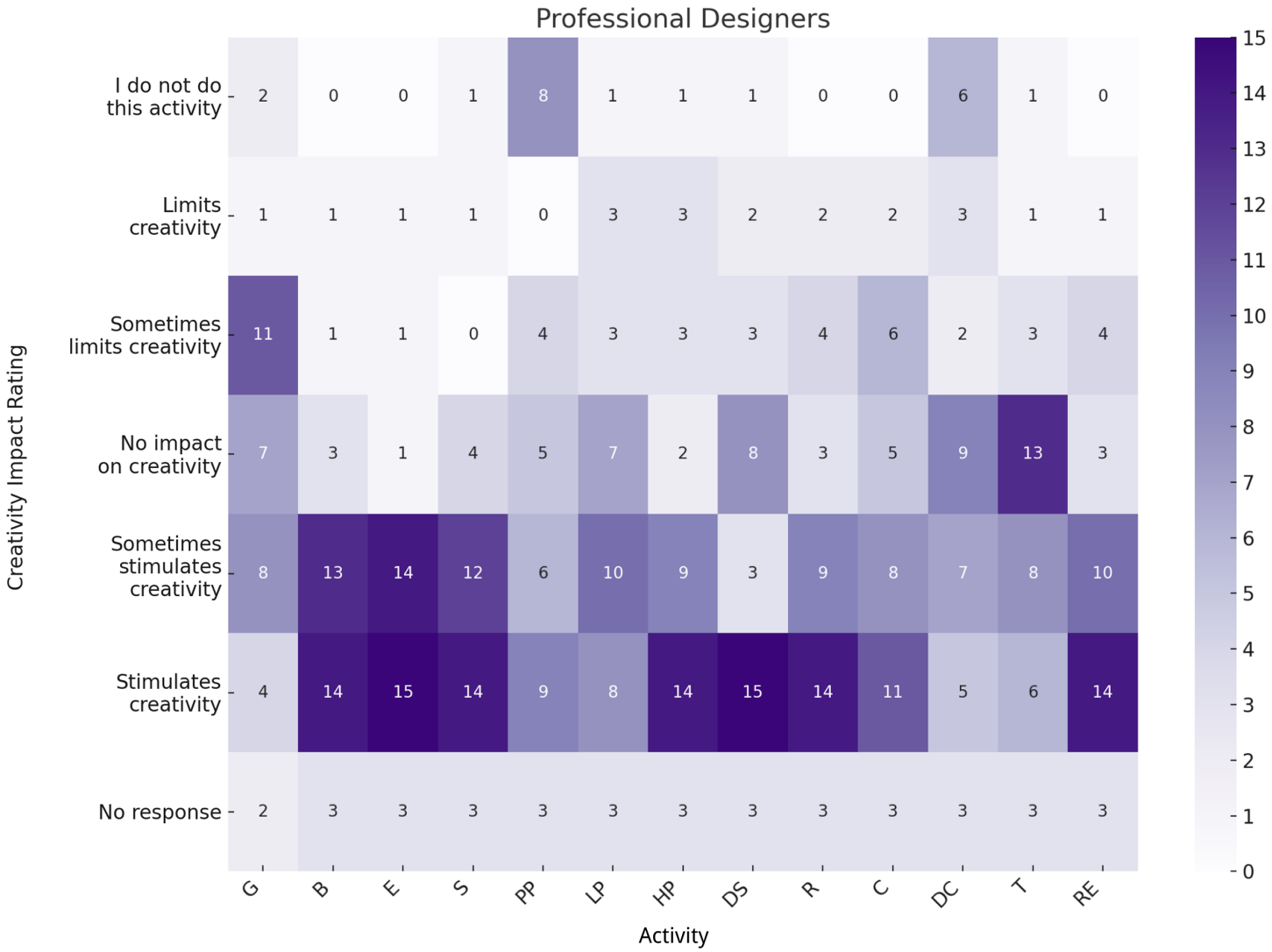

Figure 3: Professionals and students showing how different activities impact their creative process: Using guidelines (G), Team brainstorming/discussions (B), Exploring design ideas (E), Sketching (S), Paper prototyping (PP), Low-fidelity digital prototyping (LP), High-fidelity digital prototyping (HP), Using design software (DS), Reviewing and critiquing designs (R), Collaborating with non-design team members (C), Development and coding (DC), Testing (T), and Redesigning (RE).