Quick sketches in interior design practice

A descriptive analysis of perceptions, use, and competencies

Media choices: Hand sketches and digital sketches

Jill Pable, Ph.D.
Principal Researcher
Department of Interior Design
Florida State University

A research study endorsed by the Council for Design Accreditation
Design professionals, including those that practice interior design, frequently employ quick graphic sketches such as perspectives, elevations, plan views and details in the design process to record their emerging ideas and explain their intent to others. Such drawings, in fact, have long been considered an essential part of the creative design process. Drawings can communicate a great deal of information, a fact that suits the current era of a quickly expanding societal knowledge base. Notes change consultant Kurt Hanks, “the fact that we live in the Information Age has been said too many times. But the fact that drawing is a powerful tool for this information age has rarely been said at all.”

Some practitioners argue that the ability to quickly visualize and graphically communicate emerging solutions is a very desirable or even crucial skill in an interior design practitioner, useful in both the cognitive process of design development and also as a tool to communicate the design along the way to others. Indeed, entire books on the topic show early sketches and the later built environments that resulted. While drawings can be produced in quick and loose or painstakingly precise fashions, Hanks notes that speed is a necessary characteristic of sketches: “What is needed are faster ways to get those images on paper, faster ways to get ideas across, and quicker ways to use drawings to get the results we need and want.”

Sketches and drawings have long held a place in the history of both architecture and interior design practice. Yet, a broad, current understanding of this skill’s perception and place in the minds of interior design practitioners is difficult to grasp beyond isolated personal experience and the occasional competitive project situation. Such an understanding might help practitioners understand if their perceptions match those of others, reflect on how clients view various types of sketches, and discover if their successes and frustrations with sketches are commonly shared by others.

Educators, too, could benefit from an understanding of practitioner’s perceptions and use of sketches, as they are charged with preparing students to be productive and responsive new professionals. For example, should students be conversant in sketches of plan views only, or are quick perspectives (a more cognitively complex task) more desirable? Are sketches created on a computer acceptable? Such distinctions loom large with regard to curricula, as, for example, it is far easier and faster to teach students to draw quick digital

plan views than it is to instruct them in fluid and quick hand perspective construction. Lastly, information on sketch perceptions and use could serve as a reality check between the realms of design practice and education: Is there synchronicity between the outcomes of students’ abilities and the perceived needs of practitioners?

There are, of course, many different types of design sketches, including orthographic types such as plan, sections and elevations, and 3D views, including axonometric sketches and perspective sketches. This study concentrates its investigation on three-dimensional types of sketches such as axonometric, perspective and three-dimensional style detail drawings where possible. The reasons for this are fourfold:

• Production of quick plans, elevations and sections are common in design practice and typically present less challenge to designers in their creation than do 3D types;
• Three-dimensional views including axonometrics, perspectives, and detail drawings that use 3D views provide more opportunities for realistic communication than do plans, sections and elevations;
• The author has anecdotally noted enduring interest in rapid 3D graphic visualization by practitioners in workshop seminars; and,
• Digital software programs are increasingly offering an alternative for designers to the traditional, and often difficult 3D hand sketch.

Because little information was available in the form of previous surveys to assist in creating specific study questions about sketching, the author chose an exploratory method of information gathering and sought to gain insight from practitioners using 1) a questionnaire sent out to 2600 professional members of the International Interior Design Association (IIDA); and, 2) individual, in-person interviews with eight interior design practitioners. These two strategies were selected so that the broad-scope responses of the questionnaire would complement the in-depth, rich information that one-on-one interviews would produce, providing a balance of breadth and depth.

Who responded
To help ensure that the study’s responses reflected the breadth of interior design practice, responses for the eight interviews and the questionnaire were collected from a cross-section of the eight practice specialties identified by the American Society of Interior Designers as residential, office, healthcare, hospitality, institutional, facilities

For more information on this study’s method including its procedure, validity, reliability and generalization, see the appendix.

5 Pable, J. (2006). “Quick perspective sketching for the rest of us”. Presentation at 2006 Neocon Conference, Chicago, IL. June 10, 2006. In the interest of the issue of investigator impartiality with regard to sketch media (hand-sketches and digital sketches), it should be noted that the author is a teacher of both hand and digital sketch methods.
management, retail and entertainment design. Interview participants represented firms of varying sizes from small to large and locations in San Diego, Chicago, Milwaukee, New York City, Mobile, Jacksonville, Silver Spring, Maryland, and Ottawa. Of the 2600 questionnaires distributed, 457 responses were received, yielding a 17% return rate. For more information on the study’s sample, see the appendix.

Questionnaire respondents were supplied the images on page 3 to help define the meaning of the phrase ‘quick 3d sketch’. Interview dialogue similarly centered around 3d graphics, but at times extended beyond this when issues of context in practice arose, and these areas are noted. Also discussed here are instances when the interview and questionnaire responses and dialogue expanded to include digital types of 3d sketches.

As in any study, it is important to note that the information reported here reflects the perceptions only of those who provided responses, and this point is particularly essential in the case of a mere eight interviews. Thus, this information should be taken as a ‘snapshot’ of the profession at one point in time from the viewpoints of a limited number of practitioners. However, where possible, questionnaire and interview results are reported together which provide an added measure of cross-reliability of the findings.

This report is the second of three sections for this study and examines practitioners’ current perceptions of sketches created by hand and those created using digital methods. The extent and emotion of this issue was somewhat unexpected, and warrants special discussion so as to document practitioners’ sometimes strong feelings concerning the impact of technological change currently confronting the profession. The information below represents themes that emerged from the data in frequencies deemed noteworthy by the principal researcher.

MEDIA OPTIONS: HAND SKETCHES AND DIGITAL SKETCHES

The study results reflected significant and often unprompted dialogue from questionnaire and interview respondents concerning choices and implications for hand-created and digitally-created quick 3d sketches.

.....
When asked what media their firms use to create quick 3d sketches, and given the opportunity to select multiple options, 74% of those with an opinion indicated paper and writing instrument and 62% indicated computer-based drawing programs.

Firms use hand sketches and digital sketches each to their best advantage.

Interview information suggests designers are basing sketch media choices on various criteria including specialty practice area (residential, commercial, etc.), nature of the client, and phase of the design process. Study responses suggest that many firms tend to be ambidextrous with regard to digital versus hand sketch techniques, and/or use one technology to boost the advantages of the other.

For example, Meredith Thatcher’s facilities planning firm uses hand sketches to convey human experience and aesthetic issues, while simultaneously using Visio and CAD to help with specific precision decisions and preliminaries.

Thatcher noted a change in client perception concerning hand and digital images used to sell projects. The 1990’s saw an emphasis on speed of design and installation, which often left no time for perspective sketches. Today, building information and modeling technology is increasingly becoming easier to use, which is helpful to the designer. However, Thatcher perceives that clients can view computer renderings as ‘nice sizzle’, but not enough to make them connect and commit to a project, as such digital views are becoming common. Clients may also view digital images as costly and may consequently question this ‘excess’ service and the designers’ fee required to create them. However, if clients perceive they are getting these drawings for free, they are happy to receive them. This situation leads Thatcher to consider that casual yet information-rich hand sketches may have a niche in overcoming these objections.

Questionnaire respondents reported the software programs they use to create quick 3d sketches.

<table>
<thead>
<tr>
<th>MEDIA OPTIONS: HAND SKETCHES AND DIGITAL SKETCHES</th>
<th>AutoCAD</th>
<th>Sketchup</th>
<th>Other (unspecified)</th>
<th>3dVIZ</th>
<th>Revit</th>
<th>Photoshop</th>
<th>CAD</th>
<th>Microstation</th>
<th>Form-Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>132</td>
<td>125</td>
<td>66</td>
<td>29</td>
<td>28</td>
<td>23</td>
<td>18</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>% of total responses</td>
<td>30%</td>
<td>28%</td>
<td>15%</td>
<td>7%</td>
<td>6%</td>
<td>5%</td>
<td>4%</td>
<td>3%</td>
<td>2%</td>
</tr>
</tbody>
</table>

* n= 444. (Respondents were permitted to list multiple programs.)
Hand drawn sketches have certain advantages over digitally-created sketches and vice versa.

Hand-created sketches
Both questionnaire results and interview information confirm the enduring value of hand sketches to interior design practice.

Characteristics of hand-produced 3d sketches
Source: case study interviews.

<table>
<thead>
<tr>
<th>Positive aspects</th>
<th>Negative aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand-produced 3d sketches</td>
<td>Best express the human experience of space</td>
</tr>
<tr>
<td></td>
<td>Inexpensive to produce</td>
</tr>
<tr>
<td></td>
<td>Permit more freedom in design process</td>
</tr>
<tr>
<td></td>
<td>Permit more equal collaboration (multiple pens—not just one computer mouse)</td>
</tr>
<tr>
<td></td>
<td>Allow for spontaneous communication</td>
</tr>
<tr>
<td></td>
<td>Permit on-site changes and communications</td>
</tr>
<tr>
<td></td>
<td>May provide vagueness that is used to advantage</td>
</tr>
<tr>
<td></td>
<td>Can promote the ‘fortunate accident’</td>
</tr>
<tr>
<td></td>
<td>Not all practitioners are fully capable of hand-drawn sketches and drawings (though partial ability is still valued and used)</td>
</tr>
<tr>
<td></td>
<td>May be insufficiently precise within client communication graphics</td>
</tr>
<tr>
<td></td>
<td>May be insufficiently slow within client communication graphics, especially with changes</td>
</tr>
</tbody>
</table>

Hand sketches can get at the human emotional experience.
Several interviewed practitioners described that hand sketches permit exploration and consideration of beams, lighting patterns, and the ‘street level’ view of spaces in a way more connected to the nature of human comprehension than computer-based sketches are currently capable of. In turn, this can help clients bond to the concept of a project.
Hand sketches are quick, spontaneous, low-tech and portable.

“The great thing about quick sketching is that it is quick - it wastes no time in production. It tells the story without the commitment to the design. It begs to be modified.”

-Practitioner questionnaire respondent.

These long-known qualities of sketches on paper continue to make hand sketches an attractive choice in certain circumstances. Kay Seno described that a client needed clarification on a water feature in a healthcare space at the last minute and there was no time to put the idea into digital format. A quick hand sketch proved more than adequate for their needs by adding a little color and title block.

Meredith Thatcher discussed the physical freedom that comes from the hand sketch “because of the ability to rotate the paper, turn it over, twist it, just move it freely…” Such movements promote flexibility as well as the fluid and intuitive sharing of ideas with others. Brian Thornton also appreciates the manipulative, easy-carry nature of hand sketches which permitted him to design his new home almost entirely via sketches created while on overseas flights.

Hand sketches can be perceived by clients as customized, caring expressions. Several interviewed practitioners remarked that a hand sketch can carry special meaning for clients beyond its utilitarian design solution purpose. Larry Wilson and Don Bowden explained that hand sketches provide an opportunity for the human touch and implies someone ‘taking the time’, somewhat akin to delivering a hand-written thank you note. Wilson has observed a client remarking “Somebody drew this?” and noted that hand sketches can also have the positive effect of pulling the client collaboratively into the design process.

Hand sketches can help inject the richness of human chance and positive inaccuracy into design solutions.

Larry Wilson’s supervisory position at Rink Design Partnership Inc. has allowed him to observe the outcomes of projects when approached from hand and digital processes and points of view. “Something flows very differently if the hand-eye connection is not restricted by what is seen onscreen. Designs are a lot more free and less mechanical if done freehand, and more spontaneous.” Wilson explained that designers will design
around the permutations of the CAD system if they use it for early project work. For example, a recent project dictated a huge, sweeping curve in a space plan. The curve evolved into a geometric style considered less appropriate for the design because CAD was used in the early project phase. Wilson has now instituted an informal rule within his office that schematic work be done freehand on paper rather than via computer.

Hand sketches can imply that the designer/artist has passion.

“When I start, I find a big empty white sheet of paper wonderful. I quickly become a part of my projects, like a small ant stepping into a project…. It’s almost like a meditation. I close everything else off and live in the project.”

- Carouschka Streijffert, designer.

Several interviewed designers described that a hand-drawn sketch implies more than technical ability, and passion is both a requirement for their creation and an indicator of the designer’s state of mind. Brian Thornton, for example suggested that only hand sketches “convey the immediate spirit of a project” and a designer’s hand strokes belie an expression, sense of importance and intention that are fundamentally absent in electronic drawings. That is, just as it is possible to play notes on a piano that are merely tones, it is equally feasible to create a sketch that lacks enthusiasm. Thornton, in fact, counts passion among the prerequisites for becoming a truly successful sketch artist. Albert Hadley similarly discussed the life and spirit inherent in the sketch touched by human hands. For Hadley, the hand-created sketch assumes a personality and embodies the creativity of the interior space’s solution it portrays. Moreover, such sketches cannot come from technical ability alone—“it has to come from your mind and your heart and your imagination and let it go.”
Hand sketches can be intentionally vague, and emphasize or de-emphasize detail selectively.

“If we can accept the exploratory nature of drawings, we can benefit from what they reveal. When we can accept their ambiguity, we open up the creative process to chance and discovery.”

-Francis D.K. Ching

Vagueness within sketches can help clients avoid dwelling in the minutiae and assists designers in their gate keeping function of selectively releasing information to others. Several interviewed practitioners suggested that hand sketches may be more effective filters of information than digital sketches, capable of better emphasis and de-emphasis of detail to tailor presentations to clients’ understanding and phase of the project.

Brian Thornton’s experiences in retail projects proved to him the value of selective vagueness in his client presentations. He once prepared a perspective sketch of a mall interior space which indicated the tenant of one of the stores. He later reduced the detail in the signage that identified the retailer so that another tenant who was considering moving into the mall would not be alarmed by the presence of their competitor. Thornton also acknowledged that clients can easily be distracted by unnecessary details, and described a presentation where a client asked if a person in one of the perspective sketches was wearing a particular brand of shoes. Thus, hand sketches that reference only vague shapes and colors can be a boon in retail situations if a tenant mix is not yet established or will soon change, or to emphasize focus of only certain aspects within a scene.

Hamilton Lowder similarly concurred that less ‘nitzy gritty’ detail in a sketch is helpful. Too much detail can prompt clients to ask about controversial issues, such as upholstery patterns or other details that bring unnecessary or ill-timed dialogue to the client-designer discussion.

Vagueness in hand sketches may have another advantage to designers— that of the ‘fortunate accident’. Brian Thornton described a quick sketch he created that included a quick line flourish to indicate a handrail. Client discussion of this item later resulted in a custom handrail for the project.
Digitally-created sketches

Questionnaire results suggest that digital sketches are beginning to be used more in practice, while hand sketch use is primarily unchanged, or being used less. All interviewed practitioners recognized the value of digital drawings when used appropriately within interior design practice. The presence of CAD-based drawings in design documentation is nearly ubiquitous.

**Characteristics of digitally-created 3d sketches**

Source: case study interviews.

<table>
<thead>
<tr>
<th>Positive aspects</th>
<th>Negative aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digitally produced 3d sketches</td>
<td>• Costly in terms of equipment and software</td>
</tr>
<tr>
<td>• Precision</td>
<td>• May be sterile in appearance for presentations</td>
</tr>
<tr>
<td>• Speed and efficiency with making revisions</td>
<td>• May provide too much information</td>
</tr>
<tr>
<td>• Can be appropriate for client presentations for ‘slick’ project</td>
<td>• Can produce overly ‘mechanical’ solutions</td>
</tr>
<tr>
<td>• Can help some clients better understand the design solution</td>
<td>• Can be cumbersome for early concept phase explorations</td>
</tr>
<tr>
<td></td>
<td>• Can suppress the ‘signature’ aspect or essence of a project</td>
</tr>
</tbody>
</table>

Digital sketches are precise and often detailed.

Digital imagery harnesses science to convey the image, explained Brian Thornton. Finished, precise exactness is often the result. This can also mean that “every stroke will be taken as gospel” by a client. Larry Wilson described that the use of 3d digital graphics implies a double-edged sword: “They are good because you can show the client what it looks like. They are bad because you are showing what it looks like.” That is, it is possible that digital sketches and drawings may become a legal liability in the future in such issues as color and lighting when digital issues are shown side by side with finished project photographs in court.

Several interviewed practitioners also mentioned that computer graphics can sometimes suppress the ‘signature’ aspect of a project with their hard-edged style.
Digital sketches are helpful with repetitious designs and changes. All interviewed practitioners agreed that digital methods are helpful with designs that repeat and in the case of projects subject to great or extended change throughout their development. Albert Hadley, whose career began long before CAD was in use, acknowledged that computer sketches and drawing are very useful after a design is accomplished and completed in one’s mind.

Digital sketches are being used earlier in the design process than in the past. Interviewed practitioners suggest that insertion of digital techniques for exploring design solutions is occurring ever earlier within projects. For example, medical planners can purchase programs that allow quick design of specific rooms and medical equipment, prompting the use of CAD earlier in the process than before.

Digital sketch use implies sophistication and assists a firm in competing at national levels. Interviewed respondents tacitly or implicitly confirmed that digital methods are often associated with currency in the design practice. Kay Seno acknowledged that her firm’s clients are looking for more ‘splash’ and more digital design. In response, Seno is pushing two junior designers toward engaging CAD earlier in the design process and also toward more fluency in CAD programs such as VIZ. “Everyone is in a competitive situation—you can’t simply say ‘we’re great- choose us’. You need 3d drawings to get the job and look equally sophisticated.”

Clients are becoming accustomed to digital drawings. Several interviewed practitioners explained that their clients have gotten savvy with digital drawings and have come to expect them. Other fields such as real estate now use digital graphics often, possibly helping to their original mystique. Larry Wilson described that sometimes clients don’t understand complexity of creating digital drawings, and assume they can appear with just the push of a button. This perceived ease of creation can bring clients to question that they are getting their money’s worth from a design firm, as the drawings are “produced by the computer, not a person”.

MEDIA OPTIONS:
HAND SKETCHES AND DIGITAL SKETCHES
Choice of sketch media (hand-produced versus digital) can be influenced by the project type.

While all of the interviewed design specialty practitioners used both hand and digital graphics within their design processes, facilities management and corporate projects may utilize digital techniques earlier in the design process than other specialties, as precision and efficiency are necessary and highly valued by clients.

Conversely, residential, retail, hospitality and some healthcare projects may accommodate their clients’ increased lifestyle marketing requirements by using hand-drawn graphics more often than corporate projects.

Commercial projects
Several interviewed practitioners were engaged in commercial projects and reported that realism is a principle that guides visual graphics for this project type. Designers enlist digital design early in the process, explained Don Bowden, partly because commercial clients are often versed in looking at graphics in this format. The need for brand definition and identity prompt use of precision digital views that provide detail down to the level of panel fabric. Accurate renditions of material selections suggest a logical and orderly inclusion of sample materials shown in concert with perspectives and other graphic images.

Facilities planning projects
The primary issues of facilities planning projects cause an early and enduring use of digital programs that analyze spatial needs, including affinity diagrams, bubble diagrams, proximity diagrams and organizational charts, explained Meredith Thatcher. Computer-aided design is used early on for initial analysis for how much space client is currently using by group, space type and other characteristics. If space quantity and feasibility fit, hand sketching then comes into play at the concept stage. These sketches often take the form of plan view option exploration over CAD drawings to address orientation to people groups and to the building. These sketches assist with column, stair, and door placement and to build in the character of the space evident in high profile areas and details. Essentially, facilities planners use digital sketch methods to solve specific precision decisions and preliminaries, and hand sketches to help with the human experience and aesthetic issues.
Residential projects
The need to design personal, highly customized space leads residential designers to use hand-sketched graphics to portray meaningful details. Interviewed practitioners engaged in residential projects described that such sketches can be significantly looser than those for commercial projects. Digital sketch methods may come into play in the design development phase and in construction documents. As in the case of Albert Hadley, sketches for the design can become works of art in and of themselves, worthy of gallery shows and the subject of dedicated publications.

Hospitality and retail projects
Lifestyle marketing was cited by several interviewed practitioners as being central to hospitality design concerns. This competitive market requires project solutions with a keen and focused vision of the target user and the desired human experience the space will exude. Consequently, Larry Wilson related that clients tend to look for the “bells, whistles, oohs and aahs, and the emotion behind the solution.” Graphics are expected to deliver a level of detail that reflects attention to lifestyle. For example, Wilson described that hospitality furniture plan templates often include pillows and turned-back linens. Brian Thornton explained that marketing issues are similarly a prime consideration for retail design, and consequently, retail images must balance the vagaries of tenant changes while projecting the appropriate feel for customers. For him, a typical progression of imagery starts with a hand-created sketch, moves to a digital line drawing, and culminates with an often outsourced digital rendered drawing, a visual progression Thornton described that his clients like to see.

Healthcare projects
Healthcare projects are often characterized by anticipating technological changes, allowing staff to perform at optimal levels, and offering tranquil, healing environments for patients, according to Kay Seno. These projects often begin in team-oriented brainstorm sessions that include photos, nature inspirations and other items to address the project’s overall concept. Early sketches are undertaken to understand the space and especially its three-dimensional qualities. The schematic stage is often heavily influenced by hand sketches while the design development phase and then construction document phases evolve early drawings over to digital formats. Clients of healthcare projects are sensitive that projects are not sterile in feeling; therefore, 3d wire frame scenes are often traced over by hand and then color added to soften the expression.
Entertainment projects
Creative members of Jordan Mozer’s office described that entertainment projects are often driven by each project’s individual style, which affects many of its qualities including how it is drawn and presented, its colors, and its materials. In their recent project for the Copper Bleu Restaurant, early brainstorm sessions and site visits generated multiple hand sketches that helped establish the concept for the project. After plan view functions were worked out, later perspective sketches emerged from digital wire frame foundations that were traced over by hand, then finished in water color or Photoshop. The team tends to match presentation style to the mood of the project, and if a project calls for ‘slick’, they will enlist digital sketches to support that idea.

Choice of hand versus digital sketch media can be influenced by the nature of the client.

Interviewed practitioners described several characteristics of clients that influence their approach to client communication.

Client approach to knowledge and knowing
Some clients are more analytic in nature, which can lead designers to provide photorealistic computer perspectives that help their clients better understand a design. In contrast, other clients react well, for example, to watercolor sketches and are content to not delve into minute detail.

Client level of building project experience and visual competency
Some clients are seasoned veterans of building projects, which leads designers to share CAD drawings freely with them, as they know the client understands the process and flexibility of such drawings to accept needed changes. For others, reported Hamilton Lowder, only a photo-level digital representation will suffice for their understanding.

Meredith Thatcher’s facilities planning project experience enables her to avoid sketching on-site solutions with ‘firefighting’ clients, or those that view every decision as extremely urgent. “By sketching in front of such persons, you run the risk that the client will take the sketch and build the change without you first double-checking that the idea will work.” Thatcher does feel comfortable sharing preliminary sketches with clients who seem less ‘under the gun’ and more willing to experiment with ideas.
Choice of hand versus digital sketch media can be influenced by the phase in the project’s design process.

**questionnaire**

- 71% of respondents with an opinion prefer to use hand sketch techniques in the concept/schematic project phase.

- In the design development phase, 25% of respondents preferred sketching by hand, 48% preferred computer sketch techniques, and 22% expressed no preference for one or the other.

Interviewed practitioners largely echoed the preference for hand-drawn sketches in the concept project phases expressed in the questionnaire results. As Jordan Mozer described, group charrettes are more difficult with a computer, as “you can’t have half the office sitting around one screen and talking to the guy with the mouse.”

Costs, too, would seem to favor the preference for hand sketches early on, and one practitioner pointed out that the ability to loosely sketch something would be more cost effective than digital drawings in the concept phase. This initial production is inherently time consuming; savings with regard to CAD can come later in revision phases.

Many interviewed practitioners agreed that clients do not wish to see hand sketches past the concept phase. At these later points in the project, reported Kay Seno, clients are looking for more ‘flash’. On the other hand, Larry Wilson predicted that hand sketching will become more prominent in both schematic and design development phases.

---

7 Preference for hand skills in the design development phase of a project differs between practitioners with 1-20 years’ experience and those with more than 20 years, with more experienced practitioners preferring hand drawings in this phase than their lesser experienced colleagues. (Chi Square test of independence/homogeneity $\chi^2 (2) = 15.01, p<.001$ resulting in medium-small effect size. Cramer’s V=.19 of modest relationship strength and .19 medium-small effect size)

This difference in preference is also statistically significant between educators of full professorial rank versus assistant professor rank, with more experienced educators expressing more acceptance of hand drawings in the design development phase. (Chi Square test of independence/homogeneity test $\chi^2 (2) = 17.33, p<.001$ resulting in medium-small effect size. Cramer’s V=.56 of moderate relationship strength and .56 (large) effect size.)
clients can react negatively to the tight, technical drawings that digital methods produce.

If precise, digital sketches are viewed by clients too early in the design process, they can perceive that decisions are ‘already nailed down’ and cannot be changed.

In a recent facilities planning project, Meredith Thatcher provided a hand-sketch concept to a client showing an idea for a building’s exterior façade. When the client expressed that he didn’t like it, Thatcher described that this was no problem, and that it could be changed. At that, the client asked, “You mean it’s not yet drawn on the computer?” This revealing exchange provides an example of what several interviewed practitioners described as a client perception that computer drawings are inherently permanent and changeable only at great expense and effort. Thatcher often shows early concepts in hand-drawn format “because there’s a comfort level for clients that there’s some opportunity for change” and reassures the client that they are still a part of the process. Thatcher uses CAD drawings to back up hand sketch ideas, and to show why things will or won’t work as necessary.

Don Bowden agreed that computer-generated drawings visually tell a client they have to approve or reject an idea because the project has gone too far. In early phases of a project, his office creates hand-created overlay sketches so clients are not intimidated to move walls.

Hybrid sketches that utilize both hand and digital methods can be flexible and often time efficient for client presentations.

Of the eight practitioners interviewed, five practitioners described that their office has integrated digitally-created sketches with hand techniques, usually in the form of digital wire frames that were then traced over by hand for presentation purposes. The designers described this technique as more efficient than generating perspective entirely by hand, allowing more time for design and exploring various options. These drawings were described as possessing a friendlier tone than digital drawings by themselves.
can possess. Adding hand finishing touches to a digital foundation also avoids the risk of a computer drawing getting ‘tied up’ with a single person’s expression that makes it difficult to hand off to others for adjustment.

**Media choice for quick 3d sketches in firms may be changing.**

Questionnaire results suggest that 59% of practitioners are not currently changing their frequency of using hand-creation techniques for quick 3d sketches, though another quarter of respondents are using hand techniques less than they used to. In contrast, 63% of firms are using digital techniques more than they used to for quick 3d sketches.

Practitioners’ responses to the question “Are the media your firm generally use to create quick 3D sketches changing?” n=441.

**Some practitioners advocate the continued use of hand-created sketches.**

The questionnaire provided practitioners the opportunity to provide free responses. Of these comments, 51 addressed perceptions of hand-sketched and computer-generated sketches. Of these 51 responses, 34 advocated the continued use of hand-created sketches.
A selection of these responses explains some respondents’ feelings on this issue:

- “Sketching is the basis of getting your information quickly onto paper. Jumping straight to the computer may not give you the most creative solution.”
- “As a designer, I still value hand-sketching over computers because I can have a design dialogue with anyone, anywhere, not reliant on available equipment.”
- “Although a designer may be able to produce 3D sketches by computer, it is highly important that he/she be able to communicate with hand drawings, quick sketches, to clients and contractors at any place or location.”
- “It is a valuable tool, which I feel is being preempted by computers. Communicating an idea with a sketch is vital to the design process.”
- “I have yet to see a computer sketch that can be created in 2 minutes.”

Some practitioners perceive that hand sketching techniques are being used less than they used to be.

While frequency of this perception is difficult to gauge from free response questionnaire results, below is a selection of these responses:

- “I think that hand sketching is becoming a lost art.”
- “I feel colleagues are getting farther away from the ‘human’ hand sketch.”
- “With the use of computers, professionals are ‘forgetting’ how to draw by hand. This is a useful tool in relaying ideas to clients, who so often can not grasp the designer’s ideas in plan format and finish materials.”
- “Too much emphasis is being placed on end product (aka - computer renderings) rather than on the thought process and the advantageous use of the quick sketch.”
- “I think putting a renewed emphasis on quick 3-D sketches is timely and will greatly benefit the industry.”
Some practitioners perceive that digital sketching is sufficient for their firm’s needs.

The questionnaire provided practitioners the opportunity to provide free responses. Of these comments, 51 addressed perceptions of hand-sketched and computer-generated sketches. Of these 7 advocated the use of digitally-created sketches. A selection of these responses below explains some respondents’ feelings on this issue:

- “I am not as proficient at hand-sketches, so I usually depend more upon CAD generated 3D views.”
- “It seems that programs like Revit & Sketch-Up unite the 3-D study process and the development of plans and elevations. They allow work in the 3rd dimension to be a part of the entire production process. Learning current sketch programs is equally if not more important than hand sketching.”
- “Our work is very architectural in nature and thus we design and draw in 3-d. We use Macs.”
- “…As someone who enjoys drawing, I like to see others who enjoy it and have talent. I don’t feel it is an important skill to design, with the current computer tools and digital cameras.”
- “…All in all 3-D computer generated abilities are considered more important than hand sketches.”
- “The higher the position goes, they don’t use [hand] 3D sketching or spend that much time on it……only the production level work on 3D computer techniques… So do new graduates really need to know [hand] 3D sketching to find a better job??”

Summary

Information emanating from the practitioner questionnaires and interviews suggest a changing picture of how sketches are created. Practitioners appear to associate various attributes with hand and digitally-created sketches, which lead them to choose hand and digital techniques selectively with regard to project type, client, and phase within the design process. The majority of practitioners reported using hand sketches within the conceptual design phase. Some practitioners perceive that hand sketches are being produced less or are stable in their frequency, and many firms report they are using digital techniques more than before for this purpose. For some firms, the choice between hand and digital sketches may not be an ‘either-or’ proposition, as it is sometimes efficient
to use both hand and digital techniques within a single sketch, especially for client presentation purposes. A minority of questionnaire free responses suggest that some practitioners create only digital scenes, and do not feel the need to create hand sketches.

1  Ibid., p. 7.

APPENDIX

The Study’s Questions

As little profession-wide information has been gathered to date on interior designers’ perceptions and use of either drawings or quick 3d graphics, the study’s questions were broad and exploratory in nature:

1. Do practitioners perceive that quick 3d sketches are useful? If so, why?
2. How are quick 3d sketches used by practitioners to reach design solutions?
3. Are interior design practitioners themselves proficient in creating quick 3d sketches?
4. Do practitioners perceive that recent interior design graduates are adequately prepared to produce quick 3d sketches?

Write-in responses and interviews helped guide the study toward pertinent and sometimes unanticipated lines of information. Influences of design specialty area on the above questions, as well as media choice (hand sketch and digital sketch techniques) also emerged from questioning.

Study Method

A research study was undertaken in 2006 to investigate the use and perceptions of quick 3d sketches by interior design practitioners and educators. The study used quantitative-style questionnaires distributed to these groups as well as qualitative interviews designed to enhance the questionnaire data with ‘thick’ description. This dual method sought to provide the opportunity to cross-check (or ‘triangulate’) data to enhance the validity of its findings. This paper discusses the results of the practitioner portions of the study.
**Sampling**

In order to help ensure the inclusion of responses from the breadth of interior design specialty practice, the questionnaire’s sample was derived from the 2006 International Interior Design Association’s professional membership list. This source was chosen because IIDA’s membership information permits sorting of professionals by their chosen Forum Associations, thus enabling an equal proportion of response solicitation from practitioners in residential, office, healthcare, hospitality, institutional, facilities management, retail and entertainment design. These eight specialties are identified by the American Society of Interior Designers. This method is identified as cluster sampling, a method suitable for ensuring a proportionate balance of responses from various points of view.

Participants for the interviews were selected by the author for their wide recognition in their specialty fields through leadership roles, were recipients of design awards, and/or were authors. All were active principal or partner designers within their firms. It was not necessary that interviewed practitioners were themselves fluent in 3d sketch creation (though four of the eight provided their own personal sketches during the interviews), but all were in supervisory roles over others that did create them.

**Quantitative Questionnaire Instrument**

A 59-item practitioner questionnaire was distributed to 2600 professional members of the International Interior Design Association. 2500 of these questionnaires were ground mailed to potential participants. 100 questionnaires were distributed at a continuing education workshop on quick 3d sketching offered by the author. It is relevant to note that responses from this last, small segment of the sample may be influenced by the participants’ interest in hand sketching as evidenced by their presence in the workshop. However, given that this proportion of distributed questionnaires represented less than 4% of the solicited total, this situation seemed manageable.

The questionnaire’s content was reviewed by (2) design educators other than the author during its formative construction for validity. The questionnaire was additionally pre-tested by four practitioners for logic and clarity, and suggestions from these practitioners were incorporated prior to main questionnaire distribution. All study participants were presented with a standard questionnaire instrument, an acceptable way to address reliability\(^8\).

---

Qualitative Interviews
Eight interviews were conducted with interior design practitioners between March and July of 2006. The interviews took place either in the practitioners’ offices or in the main headquarters of the International Interior Design Association in Chicago, Illinois.

A standard list of 10 open-ended questions was asked of each participant, although digression from these initial questions was permitted in order to acquire rich, unanticipated information. The list of 10 questions was reviewed by one outside design educator for logic and relevancy. As an additional measure of validity, each interview was recorded and the text transcription was shared with the participant for confirmation and correction.

Study Limitations
Caution is suggested when generalizing data from limited numbers inherent to the case study interview approach. The study’s questionnaire component helps mitigate this concern somewhat by triangulating interview data with the broader, though less detailed, questionnaire data. Resulting data should be judged as a snapshot in time arising from these particular interviewees.

Generalizability
The study’s generalizability is in part reliant on an understanding of the demographics of the questionnaire’s practitioner respondents.
- Years of design experience: 21% had 1-5 years experience; 41% had 6-20 years experience; 37% had over 20 years experience.
- Passage of the NCIDQ examination: 58% had passed; 26% had not.
- Firm size: 37% had 1-5 employees; 29% had 6-20 employees; 34% had more than 20 employees.
- Job title: 45% were principals; 15% were project managers; 36% were designers. A total of 4 respondents were draftspersons or interns (less than 1%). For further information on respondent demographics or study generalizability, contact the principal researcher.

Data Analysis
Questionnaire results were recorded, write-in responses were categorized and quantified where appropriate, and descriptive statistics were calculated using Survey Monkey web-based survey services.
All interviews were taped and transcribed to text transcripts. These transcripts were shared with the interviewee for clarification and correction. Interview data were then unitized into appropriate, meaningful phrases and categorized, and common emergent themes were identified. Patterns and connections were repeatedly reorganized based upon review of the responses. Because previous research concerning interior designers' drawing usage is sparse, a grounded theory approach was adopted that allows categories to emerge from the data rather than from theories developed by other researchers. The interviews' emergent themes were then compared against the questionnaire data to provide a measure of cross-check where possible. As researcher personal background can affect qualitative data conclusions, it is disclosed that the principal researcher is a college interior design instructor who teaches both hand sketching and digital visualization techniques. Hand and digital sketches shown here without citation are the work of the principal investigator.

This study was made possible through the generous funding of the Florida State University Council on Research and Creativity, the support of the Florida State University Department of Interior Design and the International Interior Design Association. This study is endorsed by the Council for Interior Design Accreditation. The analysis described herein is are the conclusions of the principal researcher and do not necessarily reflect the opinions of these supporting organizations.

Jill Pable, Ph.D., IDEC, IIDA, principal researcher
Department of Interior Design
Florida State University
Tallahassee FL 32306-1231
850-645-6831
jpable@fsu.edu

9 Ibid., p.274.