Surveying Stakeholders: Research Informing Design Curriculum

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Abstract

Fundamental to design education is the creation and structure of curriculum. Neither the creation of design curriculum, nor the revaluation of existing curriculum is well documented. With no clear documentation of precedent, best practices are left open to debate. This paper and presentation will discuss the use of a survey as a research tool to assess existing curriculum at Iowa State University in the United States. This tool allowed the needs and perspectives of the program's diverse stakeholders to be better understood. Utilizing survey methods, research revealed the convergence and divergence of stakeholders' philosophies, theories and needs in relation to design curriculum.

Accreditation and professional licensing provide base level of guidelines for design curriculum in the United States. However, each program's curricular structure beyond these guidelines is a complicated balance of resources, facilities, faculty, and the type of institution in which it is housed. Once established, a program's curriculum is rarely reassessed as a whole, but instead updated with the hasty addition of classes upon an existing curricular structure. Curriculum is infrequently re-addressed, and when it is, it is typically based on the experience and opinions of a select group of faculty. This paper presents how a survey was developed to collect data to inform curricular decision- making, enabling the reduction of faculty bias and speculation in the process. Lessons learned from the development of this research tool will be shared so it might be replicated at other institutions, and be efficiently repeated periodically to ensure currency of a program's curriculum.

Keywords: education, curriculum research, curriculum design, undergraduate design curriculum

When a college or university design department looks to re-examine or develop a graphic design curriculum, there are few vetted resources to refer to. A common first step is the benchmarking of the competing and parallel curriculum at other institutions. This was the first step undertaken for the survey addressed in this paper. It is a challenging undertaking, as most schools do not publish curricular structure and objectives outright. Instead, they can be pieced together through course schedules and curriculum degree sheets published online for their students. While a valuable and insightful endeavor for a means of comparison, this research process does little to inform a department toward their own curricular direction. Individual curriculum is greatly driven by each program's unique situation of how they are housed within their larger institution and their balance of resources, facilities, faculty and stakeholder needs.

Any program working towards the validity of accreditation will first seek out a national accrediting body for a basic understanding of required criteria for this process. In the United States, this organization is the National Association of The Schools of Art and Design

(NASAD). Founded in 1944, NASAD is an organization of schools, conservatories, colleges, and universities with approximately 352 accredited institutional members. It establishes national standards for undergraduate and graduate degrees and other credentials for art and design and art/design-related disciplines. It also provides assistance to institutions and individuals engaged in artistic, scholarly, educational, and other art/design-related endeavors. NASAD standards concerning graphic design are developed in consultation with the national professional organization for graphic design, the American Institute of Graphic Artists (AIGA), and approved by the accredited institutional members of NASAD. The NASAD standards mandate an effective relationship among goals, curricula, resources and projected competencies for graduates. Undergraduate graphic design programs are presented as majors by meeting NASAD standards for professional degree programs only if they have demonstrated that students are expected to gain the common body of knowledge and skills before graduation. NASAD requires that approximately 65% of the total program be devoted to studies in design, design history, art, and related areas, and at least 25% of the total program is to be devoted specifically to studies in graphic design. This establishes a basic structure for curriculum to follow. However the content, time on specific tasks, expectations and required proficiencies upon graduation must be uniquely reflective of individual programs and their stakeholders (NASAD 2010). How then, is a program designing or re- designing its curriculum to determine its objectives and needs beyond the structure set forth by an accrediting body—in a manner free of faculty bias and speculation?

Presented in this paper is one Midwestern University graphic design program's development of a survey tool to inform a re-assessment of the curricular structure—after the benchmarking of comparative programs, the consultation of an advisory board and consideration of the foundational requirements of accreditation. By investing in research, the unique needs and opportunities can be revealed for individual programs, and it is argued that research of this nature is an often-overlooked component of curriculum development.

Literature Review

In preparation for the development of a survey tool to inform graphic design curriculum, a literature review and investigation into the proper and effective development for a survey was completed. Designing a survey to yield high quality useable data and achieving a high return rate is not as easy as it might appear. (Boynton 2004) Surveys are frequently used to collect research data. As a research tool, surveys can provide reliable data to answer a research question. With careful planning, surveys can yield high quality data, achieve good response rates, and provide anonymity. The latter encouraging more honest answers than, for example, interviews. This can help to reduce bias (Marshall 2004). As with all research instruments, there are advantages and disadvantages.
Advantages include that they are relatively inexpensive to produce and provide high-volume, time-efficient data collection. Disadvantages include the potential cost of data distributions and collection (depending on how distributed), inaccurate, incomplete or mischievous responses and low response rates (Grimmer and Bialocerkowski 2005).

All surveys should include an introduction, which states the survey's purpose and the research question. It should also provide the principle researcher's contact details, evidence of ethics

committee approval, the estimated time required for completion, and assurances of respondents' anonymity. Care should also be taken not to inadvertently collect information that could identify respondents. To maximize response rates, surveys should take less than 10 minutes to complete (Staples 1991). Before executing a survey, a thorough literature review should be conducted to ensure there is not an existing standard survey on the research topic. If a new survey instrument is required, survey content and question construction should be based on defensible qualitative data, which reflect the perspective of individuals representative of the population of interest (Rice and Ezzy 1999). When all possible answers are unknown, respondents should be given the option of an 'other' category which allows them to reply using free text. Analysis should consider the frequency of 'other' responses and the themes of the free text answers. This provides important information regarding the research question, and enhances future survey construction (Grimmer and Bialocerkowski 2005).

Questions in surveys should be short and focused, consisting of generally twelve words or less. The more structured the questions are, the easier they are for the researcher to interpret, as the data produced will be quantitative (in other words information that is quantified and thus numerical). To yield qualitative data (non-numerical observations and narrative data) a high proportion of open questions must be asked. There are a range of question types that might be used in a survey such as: open questions (those where the expected response is in words); closed questions (where a respondent is offered a choice of alternative responses); quantity (where the response is a number); list (where the respondent can select more than one response, as the responses are not mutually exclusive); category questions (where there is a list of mutually exclusive categories); ranking/scaled (an example is the Likert scale where the respondent chooses a ranked option from a list, indicating their degree of agreement or disagreement with a statement); and grid questions (where more than one dimension is measured). There are also key things to be avoided in survey questions such as: hypothetical questions, imprecise questions, ambiguous questions, assuming questions, double questions, leading or loaded questions, presuming questions, and memory questions (Marshall 2004). Sequencing of the survey questions is important to increase response rate, and it is better to start with easy, non-threatening, non-sensitive questions. Filter questions are appropriate where it is not necessary for all respondents to answer all questions (Marshall 2004).

Piloting should occur before the questionnaire is administered to the research sample to ensure the reliability and validity of the questionnaire. Reliability is the degree of consistency or dependability with which the instrument measures the attribute it was designed to measure. This is to ensure that the differences in results come from differences in respondents, not differences in how the question was understood. Validity is the degree to which the instrument measures what it was intended to measure. An unreliable survey cannot be valid; however, a reliable survey can be invalid. The extent to which the sample size represents the population is a factor in assessing the validity of a study i.e. the extent with which the results can be generalized to other samples or situations. (Marshall 2004).

While surveys offer a valuable data collection method, they require careful consideration at the design, application, and analysis stages to ensure reporting of valid and reliable data from a sample of respondents who are representative of the population of interest (Grimmer and Bialocerkowski 2005).

Research Methods

For this research, a survey for the stakeholders of an undergraduate curriculum in graphic design was developed utilizing Qualtrics. This web-based software, licensed by many research universities in the United States, allows users to create surveys and generate reports without having any previous programming knowledge. Through the use of Qualtrics as a survey tool, both qualitative and quantitative data was collected anonymously in aggregate from design students, graphic design educators, alumni and practicing professionals. These key stakeholder groups were determined to be those most invested in a typical design program's curriculum. This was established through the consensus of an ad hoc undergraduate curriculum committee, consisting of ten of Iowa State University's graphic design faculty.

Informed by the literature review, an introductory statement explaining the research question, the researcher's contact information, time estimated to complete the survey, internal review board (IRB) approval of the survey, and assurance for the anonymity of respondents was placed at the front of the survey. Content and questions for the survey were developed by a faculty member within the program and vetted through program faculty and small focus groups of students and processionals. The final version of the survey was distributed to current students through classroom instructors. A snowball sampling of design educators and practicing professionals was attained through the distribution of the survey link by e-mail to acquaintances and alumni lists. They were asked to further share the survey link on social media to acquire an extensive, national and international sampling. Approval was applied for and acquired from Iowa State University's Internal Review Board (IRB), so all data collected might be published for the benefit of the academic community. After a two-month distribution cycle the survey received over 250 responses.

The survey was structured in a manner in which the response to the first question (a filter question) determined what kind of a stakeholder they were (student, educator or professional) and directed them to a bank of questions relevant to their investment in graphic design curriculum. Survey research suggests surveys should take 10 minutes or less to complete; therefore, each set of stakeholder questions were kept to less than a dozen questions to ensure respondents could take the survey expediently. (Staples 1991).

Stakeholders were asked individual questions relevant to their investment and perspective of the curriculum, with the exception of two common questions which everyone taking the survey was asked. Questions regarding the perceived weaknesses and strengths of the existing curriculum were the two common questions asked of all stakeholders. The responses to these common questions were especially valuable to ensure faculty were eliminating assumptions and biases as they addressed the existing curriculum, and make certain proposed changes were based on evidence. This also revealed minor, yet surprising differences in the perceptions of strengths and weaknesses among the three different stakeholder groups.

The survey was crafted to collect both qualitative and quantitative data, and had a blend of open, closed, list and category questions. Additionally, filter questions were utilized, so

respondents were directed only to questions necessary and appropriate to them.

Discussion

Of the three stakeholder groups responding to the survey, students were the largest with a total of 145 student replies. The next largest category to respond was professionals with a total of 78 filling out the survey, followed by educators with 36 participants.

Student Respondents

Of the 145 student responses, 69 were freshman that had not yet gained entrance to the program. The remaining 76 responses were from students currently in the program: 19 sophomores, 20 juniors, and 33 seniors. All student stakeholders were asked if they had applied to other schools when considering majoring in graphic design to aid in determining the program's primary competition. A slight majority of 56.20% had considered another school. When asked the identities of other schools considered by these students, researchers were able to discern that geographic location seemed to be a large determining factor. Of the 54 other design programs listed by students, the top 10 most commonly mentioned institutions were in the same or neighboring states.

Freshman (not yet participating in the curriculum under study) were asked what were their anticipations of the curriculum they hoped to enter in the near future. While this question was an open question (eliciting qualitative data), researchers were able to group responses into common themes. These groupings determined a majority of freshman expected a curriculum focused on technology and software skills to prepare them for professional practice or advanced learning.

The rest of the enrolled student stakeholders answered questions focusing on a range of topics. Questions addressed their perception of the current curriculum and proposed format changes to the curriculum. Two open-ended questions were also used to address expectations and give students the opportunity to express additional thoughts or concerns not covered in the survey questions.

The upperclassman stakeholders' first question addressed their perception as to whether the current curriculum was adequately preparing them for their future pursuits. While a majority (74.65%) replied 'yes' the curriculum was fulfilling their needs, a concerning 25.35% replied 'no' it was not. With a quarter of the respondents replying negatively, concerns that a reassessment of the curriculum was unnecessary were quelled.

The survey also provided the opportunity to ask students their preferences and perspectives of topics covered in the curriculum and what they felt might be the most applicable means of delivery. Addressed in these questions were the standing arguments of teaching technology within a graphic design curriculum and whether or not resume and portfolio preparation should be a part of the formal curriculum. Only 8.20% of students responding to the survey felt that technology should *not* be integrated into the design curriculum. This small percentage

felt technology should be learned outside of the curriculum through online means such as Lynda.com. This was an important understanding; it highlighted the importance for faculty to include technology as a part of their design studio instruction within the curriculum. This aspect of the survey was additionally informative, as many of the faculty were in favor of eliminating classes which taught technology, and instead urging students towards online tutorials.

Understanding that this is not a preferred instruction method for the students highlighted a key discrepancy between the trajectory of the curriculum and student stakeholder needs and desires. When the question was posed regarding the preparation of business papers and portfolios integrated into design curriculum, only 9.84% of the responding upperclassman students felt it was *not* necessary to include topics of this nature. In assessing the curriculum, faculty were divided on the necessity of including this type of instruction in the curriculum, while the stakeholders it served found it important. These survey questions helped to resolve the on-going debates among the department faculty regarding integrating technology instruction, portfolios and professional presentation into the existing class structure. In these instances research data clearly highlighted discrepancies between faculty assumptions and student stakeholder needs and desires.

The question series for upperclassman student stakeholders also collected qualitative data regarding their hopes and expectations with the curriculum. A majority of the qualitative comments collected could be organized into a common theme, which culminated in focuses on careers and being well prepared for professional practice. This was closely followed by comments collectively themed as the acquisition of graphic design knowledge and the specific types of design projects they hoped to experience in the curriculum.

Educator Respondents

Educators were the minority of stakeholders responding to this survey, with only 36 filling out the survey. The first question asked of the educators was one to ascertain their level of experience as a design educator. A majority of those responding (36.11%) were fairly new to the profession with 4–9 years of teaching experience. Those with the least amount of teaching experience (1–3 years) and the most amount of teaching experience (30–40 years) were the minority of respondents. (table 1)

Table 1: Experience Levels of Responding Educators

Answer	*Percent*
4–9 years	36.11%
16–20 years	16.67%
10–15 years	13.89%
21–30 years	13.89%
30–40 years	11.11%
1–3 years	8.33%

Educators were asked where they received their graduate degree in order to ascertain the range and variety of education experiences and philosophies influencing the respondents. While some omitted a response to this question, it was determined a minimum of twenty

different graduate programs were represented in the responding educators. While the majority attained their graduate degree from public universities, a blend of public and private institutions was represented.

Respondents were asked an open question regarding what they felt were the key aspects making the curriculum they were currently teaching effective. While open ended, a majority of the qualitative comments could be combined under thoughts related to how their courses and programs were structured, as well as references to specific types of projects within their curriculum. In the next largest grouping of themed comments from this question, educators specifically referenced a curricular focus on knowledge, skills, problem solving and critical and strategic thinking.

When asked an open ended question regarding what was integral for graphic design education programs to include when structuring curriculum to meet future needs, faculty responses were divided and the qualitative feedback on this question was not as easily categorized. The top themes, most evenly distributed with four to five educators referencing each of these, were: a focus on thinking and problem solving, a focus on digital and interactive design, a focus on design fundamentals and foundational skills, and a focus on curriculum that was balanced and diversified. Categories closely following these, with three educators referencing each were: a collaborative, networked focus; a focus on experimentation and curricular flexibility; a focus on users and human behavior; and a specific focus on industry.

Professional Respondents

78 professionals responded to the survey. The first professional question asked was one to ascertain their level of experience as a practicing professional. 31.17% of the professionals responding had practiced for a decade or more, this was closely followed by those respondents who had been practicing less than a decade (4–9 years) with 27.27% practicing within that time frame. The fewest respondents (3.90%) had been practicing for the longest time (30–40 years) and the second smallest sampling at 11.69% had been practicing for the least amount of time (1–3 years). These results reveal a majority of those providing responses to the survey had a good amount of experience and were potentially in a position to influence the hiring process of recent graduates.

Table 2: Experience Levels of Responding Professionals

Answer	*Percent*
10–15 years	31.17%
4–9 years	27.27%
21–30 years	12.99%
16–20 years	12.99%
1–3 years	11.69%
30–40 years	3.90%

Overall percentage does not total 100% because some individuals did not respond to this question

Professionals responding to the survey were also asked about the type of design work they did. This question sought to provide information ensuring our curriculum is accurately

preparing students for the nature of work they would be facing immediately upon graduation as well as into the future. The faculty perception was the existing curriculum was in need of a stronger digital focus; however, faculty were divided as far as how to approach this and whether it should be a balanced or primarily digital focus. Responses from the professionals indicated 27.63% of the professionals did an equal combination of print and interactive, followed by 17.11% saying they did a majority of print. This helped faculty come to a consensus that print still has a role to play in the graphic design industry and therefore graphic design curriculum. However, with only 9.21% saying they produced almost entirely print design, and 15.79% of the respondents stating their work was almost entirely interactive—there was clear support from this survey for the belief of digital gaining momentum well into the future within the graphic design industry. It should also be noted that 11.84% indicated a majority of their work was interactive, and typical industry forecasts predict this number is only going to grow, not diminish. These findings are all valuable in crafting a sustainable and forward- looking curriculum.

Professionals familiar with the existing curriculum were asked to address curricular specifics once they were identified by a filter question. If they were alumni of the program, they were asked if they felt they had been adequately prepared by the existing curriculum after working within the industry for several years. A majority did feel they were prepared, with 67.31% indicating ‘yes’ and 32.69% reporting ‘no.’ While rewarding to hear the majority was affirmative, 32.69% responding ‘no’ leaves room for improvement for the curriculum. Those responding ‘no’ were then filtered to an opportunity to delineate their concerns. These responses were beneficial to further focus the potential opportunities for overall curricular improvement. Many of the qualitative responses referenced and reinforced the opinion of a need for a stronger focus on digital design within the curriculum. While not an unexpected result from the survey, it was a useful one in supporting what faculty already believed to be a curricular deficit.

In summation, professionals were asked two questions regarding the most decisive factors in their hiring process of recent graduates and their perception of what will be the most important skills they should have in the future. While both were opened- ended questions allowing for qualitative answers, the responses from professionals contained a large degree of consensus and were quite readily grouped into similar ideas and themes. In response to important future skills for graphic design graduates to have, the clear majority fell into three categories: strong thinking abilities (problem solving, strategy and creativity), adaptability, and digital knowledge. Highlights and themes of communication and leadership abilities as well as user experience were the next common response groups.

In response to the most decisive factors in their hiring decisions, an overwhelming majority of the comments (49 of the 78 respondents) stated that people who were ‘easy to work with’ was the key determining factor. Comments highlighting this quality mentioned characteristics such as: positive attitude, good personality, professionalism, respectful, and able to take criticism well. This overwhelming consensus was followed closely by two other categories themed as: thinking abilities (problem solving and critical thinking) and willingness to learn. While it is clear all of these qualities are valuable and sought after in a future employee or co-worker, it was an eye-opening revelation. This is especially significant in a profession where the

presentation of a strong body of work in the form of a portfolio is the well-established foundation of the interview process.

The common questions

There were two survey questions that were commonly asked of all three stakeholders (student, educators and professionals alike). These two questions asked those familiar with the existing program to select categories of strengths and weaknesses within the existing curriculum. These questions revealed whether the perceived strengths and weaknesses aligned among the stakeholder groups and within each group. It was of interest to see that for both questions (regarding the strengths and weaknesses of the existing curriculum) the educator stakeholders varied the most among themselves, while the student and professional stakeholders had more overall internal agreement. It is hypothesized this may be a reflection of educators' specialized areas of interest and research and a viewing of curriculum through that lens. Regardless of the reason, it further points to the need for research to be a foundation for curricular directions, rather than being built upon individual educators' opinions and individual philosophies.

Research limitations and future directions

This survey was established as a foundation for future iterations to routinely take place, ensuring the currency and maintenance of the curriculum. Results from this survey will be used to craft a follow-up survey every two to four years to evaluate progress in the curriculum and ensure currency. Many of the open questions soliciting qualitative comments in this survey (whose responses were categorized into themes) will evolve into category questions in future iterations of this survey, allowing for more definitive data.

The predominance of open questions was one limitation of this initial version of the survey. However, it was beneficial to first explore key questions of this survey in an open manner to ensure a proper category selection in future iterations. It might be best to consider this initial survey an expansive test pilot or focus group survey.

The omission of the survey to collect geographic location information from the educator and professional respondents was another limitation of this research. Because this information was not collected, it limits the ability to concretely determine how widely distributed the survey was. Future iterations of this survey intend to collect this information, and those wishing to replicate this survey should consider including this key information from demographics surveyed.

Of the common questions asked across all stakeholders (the questions regarding strengths and weaknesses of the existing curriculum) it would have been beneficial to have respondents rank the strengths and weaknesses of the existing program, rather than merely select categories of each. This would have ensured not only an understanding of strengths and weaknesses, but also a clear prioritization of them. However, regardless of this limitation, these questions provided an informed consensus on existing curricular strengths and weaknesses—rather than merely reflecting opinions of the faculty charged with reviewing the curriculum.

Conclusions

The results of the survey were valuable in resolving bias and misconceptions held by faculty responsible for the assessment and crafting of the curriculum. It changed the intended delivery methods for both technology, portfolios and business papers in the curriculum. Originally the intended delivery methods for these were based on faculty preferences. The summarization of the survey data provided quantitative consensus to support arguments for student stakeholder needs and desires instead of qualitative speculations. Conducting the survey and reviewing the results with the entire faculty body helped move the discussion from faculty preferences to the needs and desires of student stakeholders. The research also helped to move curriculum discussion from idealistic to a combination of idealistic and pragmatic when survey responses from professionals were presented. When forecasting the future, professional and educator responses were overall in agreement, but key differences in secondary levels of importance encouraged discussion which helped to fine-tune additional curricular focuses and details.

With the use of research and therefore more objective information to base decisions on, faculty and departments are able to more efficiently come to a consensus on the direction and needs of curriculum. As Adrian Shaughnessy stated in an October 2014, *Computer Arts* magazine article, "Design education at the university level is like a slightly wonky triangle. It has lots of students at one point, far fewer educators at another point, and what academia likes to call 'industry' at the third point. Each looks for something different, but each is dependent on the other to find it." He goes on to state that hovering over all of these is the storm cloud of tuition fees. Shaughnessy points out that because tuition fees are now eye-wateringly expensive, new marketplace logic permeates all aspects of higher education. As a consequence of fees and the world changing at a supernova speed, design education is going through a period of tumultuous internal and external scrutiny, triggering many questions (Shaughnessy 2014). This scrutiny demands design programs develop mechanisms to keep them current and competitive. Utilizing research tools, such as surveys, is one effective means of ensuring curriculum evolves in a manner based on a solid foundation, rather than speculation. When a survey is created with consideration for factors such as sequencing, question types, and survey length they can produce strong response rates. With sound data from strong responses, curricular decisions may be made in a logical and informed manner. This helps curricular considerations move beyond baseline accreditation standards, to develop objective understandings of their individual program's needs and specific circumstances.

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Andrea teaches at all levels of Iowa State's graphic design program. Her work has been published and exhibited regionally, nationally and internationally. She has presented papers at the Design Research Society (DRS) Cumulus Conference, Southeastern College Art Conference (SECAC), Hawaii International Conference on Arts and Humanities (HICAH) and the University and College Designers Association (UCDA) Conferences.

Her research interests focus on the relationship between design education and professional practice and how this influences design pedagogy. Andrea's recent work includes the development of a card-based system for teaching design fundamentals in an outdoor classroom, investigations into ethnographic and generational research methods, and transformations in digital publishing.