1999

‘Stuckness’ in the design studio

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The design studio, the setting of most architectural design education today, is a complex and challenging experience. Not only are the students expected to grasp many new concepts and ideas but they are also asked to perform at least two tasks simultaneously: to design and to learn to design. The students in addition must present and defend ideas, conduct personal relationships with instructors and fellow students and learn new techniques and skills. The studio is more than a place to study, it is the situation in which the student is initiated into what Dana Cuff has called the culture of the architectural profession. Few students can fully complete the studio requirements without encountering difficulties and dilemmas. In some cases these problems


The design studio, the setting of most architectural design education today, is a complex and challenging experience. Not only are the students expected to grasp many new concepts and ideas but they are also asked to perform at least two tasks simultaneously: to design and to learn to design. The students in addition must present and defend ideas, conduct personal relationships with instructors and fellow students and learn new techniques and skills. The studio is more than a place to study, it is the situation in which the student is initiated into what Dana Cuff has called the culture of the architectural profession. Few students can fully complete the studio requirements without encountering difficulties and dilemmas. In some cases these problems
lead to situations in which the student is considered ‘stuck.’ This is the ‘stuckness’ discussed here.

The design process, as any thought process inherently includes blocks and breakdowns\(^2,3\). ‘Stuckness’, therefore, is not particular to students but is experienced by mature designers as well. Student ‘stuckness’, however, was found to be related to a wider range of difficulties, such as the students capabilities as novice designers and the character of the context in which they operate—the design studio. In fact, these situations may be seen as extreme cases in which the normal studio process breaks down, revealing it’s nature. As Simmonds\(^4\) points out about situations with similar characteristics: ‘It is in these conflict situations that I feel information is most clearly revealed about a student’s state...’

A discussion of stuckness is, therefore, also an examination of the design studio and especially of the students position in it. Such an examination is relevant in light of an ongoing debate concerning the architecture design studio articulated in architectural publications. Many writers have critiqued the studio\(^5\)–\(^8\). Boyer and Mitgang, in their 1996 Carnegie Foundation report, Building Community\(^9\), clearly advocate a reform of the design studio and the architecture curriculum and some writers go so far as to suggest canceling the design studio\(^10,11\).

This study is based on the conviction that any suggestions for reform of the design studio and the architecture curriculum or the incorporation of such studio as a teaching method in other fields of practice must be based on a better understanding of how the current design studio operates and how students perceive this environment. Therefore, although this study promotes no particular method or pedagogy it pertains directly to this debate by contributing to the foundation upon which it should be based. It is also hoped that an understanding of such situations and an awareness of their characteristics will contribute to design instructors and students in learning and teaching design.

1 Research method

The study focused on two questions concerning ‘stuckness’ situations:

- What are ‘stuckness’ situations in the design studio? How can they be recognized and how are they characterized?
- What are possible causes of these situations? How can one explain the occurrence of these situations?

The research was divided into two stages as well. In the first stage a survey consisting of informal interviews was conducted. The interviewees were

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10 Beckley, R M ‘The studio is where a professional architect learns to make judgments’ Architectural Record Vol October (1984) pp 101–105
11 Rapaport, A ‘Architectural education: there is an urgent need to reduce or eliminate the dominance of the studio’ Architectural Record October (1984) pp 100
faculty, students and recent graduates of the departments of architecture at MIT and the Technion, Israel Institute of Technology. In the interviews the respondent was asked to consider the following questions:

- What does the phrase ‘being stuck’ in the studio mean to you?
- How do you recognize situations in which someone is ‘stuck’?
- Can you describe examples from your own experience or from your observations?

Two investigations in second year studio followed these interviews. The first studio was part a five year BArch program at the Technion. The second group was studying at MIT towards a Bachelor of Science. Each studio was joined for 7–8 classes in which desk crits (personal discussion sessions between instructor and student,) class discussions and pin ups (reviews) were observed. In both studio were students who considered themselves ‘stuck’, or behaved as if they were. With these students the author spent about an hour discussing their situation and its possible causes, carefully inquiring into it following a structure developed for this study, which will be discussed further. These conversations were recorded and the transcripts analyzed for the study.

2 ‘Stuckness’ in the studio
In the interviews students most commonly associated ‘stuckness’ with a feeling that they ‘did not know how to begin’ or ‘were not sure of how to proceed’. However, when pressed to be more precise and describe what these situations involve the feeling of being at a standstill was only one of many examples. Further examples were found in studies of the design studio. In all these reports, ‘stuckness’ was identified only through the students behavior, usually as compared to the behavior expected in the studio. In most cases this behavior was perceived as a hindrance to what is considered progress in the studio.

What is ‘progress’ in the studio? As already mentioned, the studio requirements are many and varied, however, the most explicit and perhaps important is the production of a novel design solution to the design problem within the given time period. Thus, the emphasis in the studio is placed on progress in the creation of the design object and the required representations of it. Progress, therefore, is expected to be visible in the ‘architectural production’, in a sequence of drawings and models, each expanding upon the information in its predecessors. In some studios progress is also measured in the production of more drawings, whatever their content. Progress is also measured through questions pertaining to the design itself.
such as: Have issues been resolved? Are the new relations in the project more complex or reflect more complex situations? And has new information been incorporated into the project?

Following are a few of the examples of behavior reported in the study as indicative of ‘stuckness:’

- **Being at a Standstill**
  The feeling of a standstill, or ‘being frozen’\(^{12}\) was, perhaps, the most frequently mentioned behavior. For some this meant a total lack of ideas and for others an abundance of possibilities they were unable to choose from, but for all a feeling of being unable to proceed with the design process.

- **Taking ‘too long’**
  A student working on one issue in the design for ‘too long’ was considered unable to resolve that problem and therefore stuck at this part of the work. ‘Too long’ depends, of course, on the task and the designer’s patience; however, more than a day was quoted repeatedly in conversations with students.

- **Not moving past an initial diagram**
  Students usually begin the design process in the studio by creating initial diagrams that outline the intentions of the design. In the following ‘stage’ the students are expected to develop these diagrams and create a formal scheme that will be the basis for their design. Some seem unable to proceed into this second stage. As Julian Beinart\(^{13}\) points out these are ‘... of the most common knots in the studio design process, particularly among beginning students’. In the Architecture Education Study a student named Petra is quoted as having said: ‘I am having problem getting past the diagrammatic phase. I’ve written down these problems on this list’\(^{14}\).

- **Fixation**
  Some of the examples in the study can be described as fixation: ‘... an obstacle, often self imposed by the problem solver, which blocks successful completion of a problem’\(^{15,16}\).

- **Repetition**
  Another behavior identified as ‘being stuck’ is the repetition of the same action (such as a sequence of decisions,) without a visible
change in the design. For example, a designer who in trying to resolve the entrance continually re-draws it without suggesting a new scheme.

Even when considering the examples collected in the study it was found that describing ‘stuckness’ is not simple. No one characteristic (such as standstill or fixation) sufficed to distinguish these situations from ‘normal’ design activity or from difficulties students encounter in the studio that are not identified as ‘stuckness’. This ambiguity is due, in part, to the fact that ‘stuckness’ cannot be described independently of a particular situation. It is a relative term, used differently by different people depending on their situation and their understanding of it. The difficulty of definition is further complicated by the fact that ‘stuckness’ situations are part of an ongoing process. Not only do they occur within the design process, but designing usually continues, at least to some degree, even when a student is ‘stuck’.

The key to understanding these situations is to consider them as a process in themselves, in which two separate sub processes must occur: the student must experience a breakdown in the design process, and then must recognize that s/he is stuck. The breakdown distinguishes these situations from ‘normal’ design and the combination of both sub processes is special to ‘stuckness’ and does not describe other breakdown situations. Moreover, this model accounts for the relative nature of the term stuckness. The nature of these breakdowns and the of the recognition process is the subject of the following discussion.

2.1 The breakdown

As already mentioned, ‘stuckness’ was almost invariably seen relative to what was considered progress in design. The description of ‘stuckness’ therefore relies on a description of the design process. In this study designing is seen as a process composed of sub processes or procedures, such as ‘specifying goals’, ‘producing sub problems’, ‘information acquisition’, and ‘projection and representation’17–21 Donald Schon and Glenn Wiggins have gone into greater detail discussing, for example, the ‘Kinds of seeing and their function in designing’22.

In this model the designer may adopt any procedure in the design and must, therefore, choose the most appropriate procedure at each stage. William Porter names these choices the ‘designer’s appreciative judgments’23. These decisions involve, for example, determining what to do (make a decision or leave all possibilities open,) choosing the tools to use (make a model or sketch a section) or choosing to follow or ignore advice. In each case these decisions determine the designers actions and behavior. As Omer Akin remarks, the designer must design not only the object but the process of design as well18.
The designer, however, is not completely free to choose any action. Each stage in the design process confronts him/her with many demands that should be met so as to allow a ‘smooth’ design process and therefore allows the designer to make mistakes or take actions that do not produce the expected goals. The student in the studio must take into consideration not only to the design project and the nature of the design process (doing things in a ‘designerly way’\textsuperscript{19}) but also the other demands of the studio, such as the instructors preferences and the levels of complexity a student at each level is expected to achieve.

A designer working ‘normally’ is for the sake of this discussion, a designer making choices in accord with the context, for whom the relation between his/her actions and the context is an effective and productive one. S/he is, to use Donald Schon’s phrase, ‘in conversation with the materials of the design situation’\textsuperscript{24}. In a productive relationship the designer can continue working and responding to the situation as long as needed.

What happens when a student begins to ‘get stuck’? First, the relation between his/her actions and the situation breaks down. Winograd and Flores, based on concepts described by Martin Heidegger, (and considering a wider group of examples,) define this as an ‘interrupted moment of our habitual, standard, comfortable ‘being-in-the-world’\textsuperscript{2}. A breakdown may be partial or complete, as a student remarked in the study: ‘one may be stuck in one realm but working in another.’ Since the designer usually must take action on more than one issue, some of his/her decisions may continue to be appropriate while others cause problems.

The breakdown may be due to a change in the studio context that the student cannot respond to, or a change in the designer’s attitude towards this context. As Coyne and Snodgrass remark: ‘We are replete with expectations distilled from our background of experiences. When the situation does not match our expectations then there is some kind of breakdown’\textsuperscript{25}. However, whatever the cause or causes, from this point onward the students decisions are no longer appropriate to the demands of the situation and so instead of proceeding in a smooth and effective fashion the design process falters or even stops. Breakdown situations are usually expressed in the behavior of the designer. These are the behaviors such as those described above and it is this behavior that is identified in the studio as ‘stuckness.’

Consider, for example, the report of a student pseudo named (at his request) Miguel. Miguel participated in a undergraduate studio at MIT during the Spring 1997 semester. Together with his fellow students, Miguel was
designing a new boathouse to replace the existing one on the Charles River. As this part of the transcript shows, Miguel was able to distinguish quite clearly between the cause of the situation and the way it was expressed in his design behavior.

M: I was at this point and I was using the T (the shape of the letter,) to shape my space and to ah...you know and to create other spaces. And the T stopped working for me, there was only so much that I could do with it. And I was afraid to, well since I had started with the T and I like it a lot because I liked what I had gotten so far, I wanted to hold on to it but I could see clearly that I couldn’t do much more with it, ah, and so that’s where I was stuck, how the question of how much to hold on to an idea. Ah...

A: So what was that expressed in?
M:?
A: Like, what kind of questions were you asking?
M: Well, Um, let me see how I can, there were a lot of smaller details such as how do I end, how do I cap this off, do I cut this off. How do I make the actual spaces have more reality to them, and I couldn’t answer those questions with just the T concept, and I didn’t have something else to help me to guide me in answering these questions. And also to create a pure T this would have to be flat.

2.2 Recognizing ‘stuckness’
‘Stuckness’, however, is more than a breakdown in the students design process. Since ‘stuckness’ is a relative concept, it is only when it is considered in light of a particular situation and of a particular frame of reference (such as the student’s previous work and the instructors expectations,) that it can be identified. Therefore, to be ‘stuck’ the student must be recognized as such. It is important to realize that the recognition of ‘stuckness’ does not necessary imply the identification of either a cause or a solution. Designers often do seek the cause of their ‘stuckness’ but this search is not a necessary component of ‘getting stuck’ and should be regarded as a separate process.

Who judges these situations and recognizes them as ‘stuckness’? In many cases it is the designer her/himself who realizes that s/he cannot answer a question s/he should be able to, feels that a goal has not been reached or senses that s/he is exhibiting recognized ‘stuckness symptoms’. Observations such as these lead the student to consider whether the situation qualifies as being ‘stuck’. In the studio the role of the instructor in the student’s design (as coach and almost collaborator) means that often s/he is the judge of the situation. Other observers such as jurors, researchers and fellow students (who may have their own frame of reference and therefore judge differently) may also identify the situation by comparing the student’s work with previous progress or with their expectations of the student.
To return to Miguel and his understanding of his situation:

A: Why did you say ‘I was stuck’? Why did you identify the situation that way?
M: OK, when I started with this idea, and I started working to get it to a more real
something that you can see as shaping real spaces, the I guess the idea, I’m not sure I
can say that, but I started having lots of ideas I did some sketching and my modeling
and I made this model and I immediately made this piece did that piece and once I
finished a step I automatically got a bunch of ideas of how to play with this more I
always had something I wanted to do with this, and then I got to this point and I did
not have any other, I started getting very attached to this and I didn’t know how to
break it...
A: Afraid to touch it?
M: yeah, I was getting very afraid to touch it...

2.3 ‘Being stuck’

A ‘stuck’ student is, in this model, a student who is unable to respond
effectively to the studio requirements and has been recognized as ‘stuck’.
This situation continues as long as the discord continues, until the designer
experiences what is usually called the ‘breakthrough’ in which he begins
to respond once more to the context and begins to ‘get unstuck.’

It is interesting to note that ‘stuckness’ situations are often described as
either short or long. What is a ‘period’ of ‘stuckness’? This term usually
refers to the interval between the recognition of the situations and the
breakthrough and is measured in relation to the time given for the design.
In the studio this is usually the length of a semester, about three and a
half months. A short ‘stuckness,’ therefore, ranges between a day and a
week since the student is still able to exhibit new work at the next cycle
of desk crits. A more serious problem might consume more than a week.
However, even if it goes on for 2–3 weeks it usually does not have a
lasting effect on the design once it is resolved. A situation that lasts longer
than this will be protracted and difficult.

Miguel, the student from the previous example, remarked on this aspect
of stuckness as well:

A: And did that go on for a while?
M: Um, Well, I didn’t work on it for a while, in relative terms I yes. In terms of the
amount of time I have been putting into this it went on for a good deal. In terms of
over all time, no.
A: No, that’s OK, time is only relative. (Gives an example.)
M: In relative time.

‘Stuckness’ situations are also characterized by one or several of the fol-
lowing responses:
Stopping

‘LL: What do you do when you get stuck?
JM: Stop.’26

As described above, standstill is one of the behaviors through which ‘stuckness’ is identified. It is also, however, a characteristic of situations that can be recognized through other behavior. It is important to note that stopping is an outcome of the situation and not its cause.

Stress

Stress is a feeling of pressure, helplessness and frustration. This characteristic of ‘stuckness’ varies greatly, of course, from situation to situation. Though stress may also be a cause of ‘stuckness’ it is often the outcome of being in such situations.

Clashes with the studio instructor

Studio ‘stuckness’ may also be characterized by clashes with the instructor. As with stress this is, in some cases, the cause of the ‘stuckness’ while in others only the outcome. These conflicts may take many forms, open confrontations, friendly disagreements and situations in which the student ignores the instructor’s advice completely.

2.4 ‘Getting unstuck’

‘Stuckness’ situations are often coupled with a process of getting ‘unstuck’, which begins with the breakthrough. This ‘reverse’ process may occur without conscious intent or is directed by the student or the instructor. The most common method for ‘getting unstuck’ is to seek help and try to see the design in a new way. Andy Pressman summed up this advice in Architecture 101:

‘If frozen, work on an unrelated task; come back to the problem at a later time from a different perspective. Isolate the problem, do more research, become more informed about it; return to the site; visit or read about related and architecturally significant work. Try changing drawing scales or media (if drawing, build a quick and dirty model and vice versa.) As always, talk to colleagues and instructors.’12

It is extremely important to remember that even when a breakthrough occurs, there isn’t necessarily a symmetry or even a relation between the cause of the situation on the one hand and the cause of the breakthrough on the other. The fact that a particular action caused a breakthrough does not imply that this was the appropriate action in the situation of the breakdown, since the process of breaking down itself has changed the situation.

The design process following the breakthrough and readjustment can again be characterized as was the process before the onset of the ‘stuckness’.

The designer is once more in accord with the situation. However, this does not imply that the processes before and after are one and the same. In many cases the changes in the context during the ‘stuckness’ situation require an altered behavior on the part of the designer. In fact, it is often said that the designer learnt something from being stuck, implying that the design process in this stage is in some way better than it was prior to ‘getting stuck’.

3 Explaining ‘stuckness’

The second focus of the investigation was to discover possible causes of ‘stuckness’ and ways of analyzing and explicating these situations. This issue, though similar, should not be confused with the query ‘why do students get stuck’? Responding to this second question implies an ability to determine the cause of situations. This, however, was found to be complicated in the studio. Though many explanations of these situations were gathered in the study, it was impossible to determine that a particular cause was in fact the cause of a particular ‘stuckness’. Even a student considering a situation s/he is experiencing at that time cannot determine definitely which, if any, of the explanations is the correct one.

The explanations, therefore, cannot be strictly defined as ‘causes’, (although this term is used for the sake of convenience.) Such descriptions should be seen as interpretations, understanding of these situations, whether provided by the student, the instructor or the researcher. For the purposes of this study, however, such explanations are enough to throw light on the nature of ‘stuckness’ situations and the studio setting in which they occur, and were therefore considered sufficient.

The task of explaining a situation is further complicated by the fact that discovering a cause of a situation (assuming that it is possible to determine causality,) is only a partial answer to why these situations occur. As Kurt Lewin explains in Principles of Topological Psychology\textsuperscript{27} no one factor can be considered responsible for an entire situation. To explain a situation, according to Lewin, each factor must be examined together with the total configuration of causes that produced the event.

So as to begin to answer these questions a sequence of inquiry was developed and used in the studio investigation. The stuck students who participated in the study were asked to follow this outline and analyze their situation accordingly. The conversations were recorded and the transcripts used as the basis for the research. The notion of inquiry is borrowed from John Dewey\textsuperscript{28} and denotes a structured investigation of a particular situation. The structure developed for this study consists of three stages, which

\textsuperscript{28} Dewey, J \textit{Logic, A Theory of Inquiry} Henry Holt and Company, New York (1938)
reflect the different stages required to understand these situations, and, as importantly, the different roles the inquirer must take in the inquiry: an ‘objective’ gatherer of information and an interpreter of the situation.

In the first stage the situation is described and any facts that seem related to it identified. Since the causes are actually explanations the process of identifying a ‘cause’ can be seen as one in which a label or meaning is attached to an observed behavior. In the study this process was based on what Chris Argyris and his colleagues have named “The Ladder of Inference.” Interpreting situations on the basis of this model means that the identification of a ‘cause’ includes the observation of a particular aspect of the behavior (first rung) an association of this behavior with the difficulties encountered (second rung) and finally the labeling of the behavior as indicative of the situation.

The second stage consists of formulating a description of the situation that incorporates the identified ‘causes’ and determines the situation as a ‘unified whole.’ Dewey defines these descriptions ‘problems’: ‘A problem represents the partial transformation by inquiry of the a problematic situation into a determinate situation.’ Since no one inquiry can describe every aspect of the situation the inquirer must choose a point of view from which to begin. In fact a problem represents not only the situation and its configuration but also the inquirer’s interpretation and attitude towards it.

Once the ‘problem’ was formulated it was possible to reconsider the situation and evaluate why the situation occurred: which factors contributed to the occurrence of the event and which did not? How did the different factors interact to allow the event to occur? Why wasn’t the situation avoided? Answering these questions revealed much information about the student’s situation and the design studio.

‘Stuckness’ situations were found to follow the pattern described by Lewin and most reflected more than one problem and issue. In some cases the situation could be understood from three or four points of view. The following descriptions exemplifies the data compiled in the study.

Dalia, the student in this example was, at the time of the study, a second year student at the Technion, Israel Institute of Technology. The project Dalia was designing was a cluster of about 15 residential units for visiting scholars, to be located on the hill-side on the outskirts of the Technion campus. At the beginning of the inquiry Dalia described the design she had been developing prior to the mid term review. In this design she wanted to create one single building that was meant to ‘soar above the site.’ At the
review Dalia presented her scheme in which her building was set upon what she termed a ‘forest of columns.’ These columns, in the jurors opinion hardly fit the description of a ‘soaring building’. Following this review she felt that the design ‘wasn’t good in my eyes. Because of this I, I felt I was stuck’.

Dalia first identified what she considered a central conflict in her design. She began by realizing that it was connected with the structural system for the design project. As she said: ‘... and in the end it was ruined because of a structural problem’. Considering the design and what the jurors in the mid term review had said Dalia elaborated on her first explanation by stating more clearly what the structural problem really was: the structural system worked and the columns were well designed but the structure did not give the feeling she intended. In fact there was a conflict between her design concept and the proposed structural system that she was unable to resolve.

Dalia was then reminded of an explanation the instructor had given for her situation: since she is a landscape-architecture student she lacks the ‘tools’ (knowledge) to deal with the structure of her design, a subject taught in the building design studio. Since she has already identified the structural issues as part of the causes of her problem she considered this explanation a cause as well.

While describing her instructor’s suggestion, Dalia interrupted herself to reflect on her own behavior, considering what she did not do to avoid the problem:

‘.. laugh...its true, how I didn’t see this and I had a feeling that I know how to treat all types of people and I don’t know how to criticize myself, but if I am looking in on the outside, I can criticize. But, I don’t give myself that space to look at it so, eh..’

Dalia later explained that her lack of criticism allowed her to ignore the conflict when it first became apparent.

She then realized that her instructor’s behavior played a role in causing her situation as well, and remarked that the instructors criticism changed after the mid term review. The instructor began to criticize the ‘principles’ of students designs and not just deal with details:

‘D: It was dealing with things I bring, if there are problems I deal with them and not, like, principle issues and its good, like, if I have the principle then its OK, its what I want to give, the principle I have and then the developing I can deal and continue with. At least that I have this (the principle.)’
Dalia’s situation can be formulated in many ways. In the inquiry the following were considered:

- The source of Dalia’s problem lies in the conflict between the concept she chose for her design and the structure appropriate to support a building such as the one she designed (i.e. the stuckness is related to the design problem).
- Dalia was unable to conduct the design process effectively and therefore ignored aspects of the design that proved to be extremely important, namely its structural aspects. Dalia was able to ignore these structural issues because she was unaware of their importance, because of her lack of knowledge and because the instructor ignored them as well and allowed her to continue with the design.

4 Types of ‘causes’
As Dalia’s example shows, the causes of ‘stuckness’ cannot be attributed solely to the fact that the student is engaging in design but must be sought in the entire situation. In fact, the causes of stuckness identified in the study included all of the following types:

- Related to the design problem
  Students often come up against the conflicts and dilemmas inherent in solving design problems that pose problems for mature designers as well. In some cases this was an explanation of the stuckness. Dalia is one such student. Her design concept required one set of decisions while the structural side imposed other requirements. This situation led to a conflict she was unable to resolve.

- Related to confusion over the nature of the design process
  An important factor found to be related to many ‘stuckness’ situations is that the students must complete a process they are still learning and may not yet understand. A student may be confused over the very nature of the actions s/he must take and therefore be unable to complete them. Two students who participated in the study reported that they were stuck because they did not have an image of the next step of the process. Although they realized that developing their design required that they adopt a new design procedure, they did not know where to aim. For one student this meant she was unsure of what the next model in the series should represent, how it should differ from the one she was working on. The other student had no idea what questions to address.

- Related to a lack of architectural or other knowledge
  The problems of a novice designer were found to be further complicated by the fact that the student is still learning and therefore may
lack information vital to the design process. Dalia, for example, reported that in her instructors opinion she needed knowledge in ‘structural issues’ to continue her design.

- Related to a lack of design and other skills
In some cases the students problem was caused, at least in part, by a lack of a skill needed to pursue the design process. Some of the skills needed are not special to the design process, but can hinder it just the same. Dalias inability to criticize herself effectively, for example, contributed to her situation.

- Involving the studio instructor
The instructors combined role as critic, coach and in some cases collaborator means that their actions play an important role in the students design process. In some cases, their effect is as important as the students, since, an instructor doing or failing to do (as in Dalias case) can affect the students decisions. The instructor involvement was considered an important factor in many cases in the study. Moreover, not only the instructors actions but his/her opinion as well, or even the opinion as the student perceives it, can be seen as a cause of ‘stuckness’ if it is not understood or it does not tally with that of the student.

- Related to other studio requirements
As already mentioned, the studio demands not only the completion of a design but also, for example, the negotiation of social relations with the instructor and the other students and completing requirements of attendance and participation. A stuck student may be unable to meet these demands (which are not always clear.) For example: in the study a student reported that she had abandoned her scheme because she felt it was ‘boring’. Following this decision she had been stuck for about a week until she began working on a new scheme that she found ‘more interesting’. Although she was unable to explain exactly what is ‘boring’ in architecture and why she felt her project deserved this description, it became clear in the inquiry that she felt enough social pressure to create something new and exciting that her design process was affected and she ‘got stuck’.

5 Conclusion
The focus of this study were situations that students of design experience in the design studio: situations in which they are ‘stuck’. ‘Stuckness’ was described as the culmination of an involuntary, unintentional process that
begins with a breakdown in the student’s capacity to respond to the studio requirements, and includes his/her recognition that he/she is stuck. The breakdown is usually manifested in the student’s behavior, often affecting the design process so that it falters or even stops. Possible causes of ‘stuckness’ were examined as well. Few situations were found to reflect a single problem. Conversely, most can be analyzed in more than one way by considering several different issues, such as the design project requirements, confusion over the design process and misunderstanding the studio instructor’s intentions.

The variety of ‘stuckness’ situations reflects the complexity of the studio experience and therefore provides insight into its structure and into the difficulties attendant upon the mastering of design. Such insight is considered important not only for the participants in the design studio but also as a contribution to understanding the design studio and evaluating its merit as an educational setting.

Acknowledgments
The research reported was conducted in preparation of a M.Sc. Thesis at MIT. The author gratefully acknowledges the guidance and support of Prof. William Porter and Prof. Gabriela Goldshcmidt.