

SKETCHING FOR VALUE-EMBEDDED LEARNING

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ABSTRACT

Sketching as a graphic record of the results of thinking is essential as a design presentation and can help develop design thinking and behaviour, creativity, problem-solving and communication skills. The aim of this study is to find the learning approach in which sketching can become a self-determined value for students. The data were collected through focus group interviews ($n = 12$) and a survey ($n = 55$) from three undergraduate programmes. The focus group interview results were analysed using the content analysis method. It was concluded that the lack of experience and skills, the limited time available for learning and the student's desire to demonstrate perfect results in their coursework hindered their interest in learning to sketch. In order to make sketching more successful, it is essential to explain the importance and purpose of sketching. Assignments related to students' future professional activity are recommended. Using methods that create a sense of freedom, including play, is also recommended. It is necessary to suggest and use different materials suitable for sketching, encourage the study of artists' sketches and give regular assignments to promote interest in sketching. Regularly completing sketchbooks (portfolios), quick sketching exercises and balancing free and given assignments are required to make sketching a self-determined value for students.

Keywords: *artistic activity, designer education, sketching in teaching, sketching materials, teacher education, understanding sketching, value-embedded learning*

Introduction

This article presents the results of the study “Sketching as a Methodological Technique in Art and Design Studies”. The study aimed to find a learning approach in which sketching can become a self-determined value for students.

Sketching skills are necessary to fix observations and can be used to record new information. Research findings confirm that sketching experiences help to realise the potential of visualisation in learning, promote concreteness and clarity of ideas and facilitate collaborative processes in idea generation and discussion. The sketching process can test assumptions demonstratively in the context of real problem-solving (Hautopp & Buhl, 2020).

Some researchers have pointed to a lack of empirical research on when sketching is needed, what value is gained from it and how visual aids fit into formal teaching methods (Hautopp & Ørngreen, 2018). The relevance of the topic is demonstrated by other problems identified in various research studies; for example, students have problems with motivation to sketch (Wood-Griffiths et al., 2015), and there are delays in the completing of sketching tasks (Thurlow et al., 2019).

That sketching and the sketching process are extremely valuable for successful design is well-founded. The reasons for sketching inhibition, according to Booth et al. (2016), can be grouped as follows:

1. individual inhibition (lack of understanding of the benefits, lack of skills and experience, disruption of creative flow caused by a perfectionist need or the inability to get into the right frame of mind),
2. social inhibition (fear of evaluation, predominantly negative; passivity of involvement),
3. technological inhibition (technology provision that does not lead to the need to sketch).

In addition, studies show that educational issues are one of the causal factors that lead to the inhibition of sketching among students. Observational evidence confirms that the provision of technology for learning cannot replace the complex cognitive activities involved in developing practical concepts (Thurlow & Ford, 2018). Leblanc (2015) points to a lack of understanding of sketching tools at the institutional level. Observing how students struggle with the creative process from idea to the final product, one must conclude that many perceive sketching only as a means of visualisation and rarely know how to use it as a creative thinking tool (Leblanc, 2015). Downs (2019) believes that institutions and educators do not understand the difference between sketching as a design process and sketching as a design presentation.

Sketching is about self-expression and self-consciousness, resulting from real experiences gained in the early stages of design; unfortunately, in situations characterised by digitisation opportunities, the possibility of sketching by hand seems to be forgotten (Wachs, 2021).

Researchers point to three aspects of the importance of sketching. The first aspect is cognitive implications, and these cognitive aptitudes must be identified by educationalists and students (Lane et al., 2009). The second aspect is educational significance. Teachers must be aware of the importance of creating appropriate pedagogical structures that use interdisciplinary knowledge to help students engage with graphical information (Contero et al., 2005; Lane et al., 2009) and understand that sketching can help develop design thinking and behaviours (Newcomb, 2007). The third aspect is economic benefits. As it has been found that sketching can help develop students' spatial abilities, communication skills, problem-solving skills, and creativity, it would be helpful to analyse the economic benefits to individuals of a unique set of cognitive skills enhanced by freehand sketching (Lane et al., 2009).

Ideation is the starting point for future thinking and can be subjective, team-based or a combined research or co-creation method. A sketch is best suited to this form, rather than a polished, drawn picture, as it is quick, cheap and suitable for beginners and experts alike. Sketching problems can be as valuable as sketching successful outcomes (Sturdee & Lindley, 2018).

Williford et al. (2019) distinguish four categories of what motivates students to sketch: achievement, competition, communication, and creativity. An individual's motivation also depends on their level of sketching – beginners are mainly motivated by a sense of achievement, while experienced sketchers are more motivated by creativity and communication. Students' self-confidence in product sketching is enhanced by the opportunity to choose between different design products and sketching tools, the progressive complexity of the tasks, allowing the use of prior experience, feedback from both their lecturer and coursemates and visual examples; furthermore, the ideal mental and emotional state of students help them to learn sketching skills faster and at a better level (van Passel & Eggink, 2013).

Methodology

This study is based on value-embedded learning theory, which emphasises the central role of values in the learning process. There is a strong link between values, emotions and emotional impact in the learning process, so it is vital to consider learners' interests, as learning always takes place in context, and the context of learning matters (Duncan et al., 2022).

Two research questions were defined to achieve the research objective:

- **RQ1:** What hinders students from sketching?
- **RQ2:** What should the learning approach be, and what should the tasks be for students to be more successful in sketching?

A two-part (Stage I and Stage II) empirical study was conducted using an online focus group interview and a survey to answer the research questions. The focus group interview and its results are described first, followed by the survey method and results. The survey questions were derived from the focus group results.

Results and Discussion

Stage I: Focus group interview

The study used an online focus group interview. According to the recommendations of Pipere (2016a), participant-informed consent forms and focus group interview questions were prepared beforehand. In line with the research questions, open-ended questions about students' sketching experiences, opinions, preferences, and recommendations for a successful sketching learning process were included. The question of what hinders students from sketching was also added. Five participants were invited from each of the three undergraduate programmes previously involved in the sketch study

(professional bachelor study programme (PBSP) “Art” students, PBSP “Teacher of Design and Technology” students and PBSP “Teacher of Primary School Education”); 12 students in total accepted the invitation. All respondents gave written informed consent to participate in the study. Each student was assigned a code (S1–S12) for anonymisation purposes. A purposive sampling approach was applied, meaning that “participants should have personal experience of the topic of the study and be able to express their views on it” (Pipere, 2016b, p. 311). The qualitative method of content analysis was used to analyse the data.

The authors of the study conducted the focus group interview. The duration of the interview was 95 minutes. The interview was recorded and transcribed and then read several times. The focus group interview elicited students’ responses to the research questions, and the results have been structured accordingly.

Results of focus group interview

The analysis of the focus group interview transcription led to the conclusion that students are hindered from sketching (RQ1) for several reasons.

1. Students are hindered by a lack of experience (“What bothers me is that I do not have enough experience in sketching” (S1)).
2. Sketching is hampered by a lack of technical skills, which stems from their lack of previous experience. Students admit that they do not know how to sketch understandably – to themselves or others (“[T]he technical capacity is just not there yet” (S2)).
3. Some students want to achieve a perfect result when sketching, but the result differs from what they have visualised in their imagination. Not achieving a perfect result contributes to students not wanting to sketch anymore. Sometimes, students do not like the sketched result because they compare their sketch with a sketch drawn by the lecturer or an example shown to them (“I have a kind of visualisation of what I want it to look like. In my head, in my brain, there is one visualisation of what it should look like, but my hand does not obey that visualisation and draw the lines that I see in my head” (S6); “What bothers me is that I do not have enough experience in sketching. Usually, I imagine what I want to create, but I do not get it” (S1)).
4. In the focus group discussion, one student mentioned that he does not want to sketch to save time because he can already see the work in detail in his imagination (“I do not sketch so much to save time” (S3)).
5. There is also the opinion that it is disturbing to sketch if the student must fit it into the time allocated by the lecturer (“It is quite difficult to sketch because of the time constraint – it is so fast” (S8)).

The responses to the second research question (RQ2) were compiled in three groups using the suggestions of Thurlow et al. (2019). To prevent delays in completing sketching tasks in higher design education, Thurlow et al. recommend:

1. promoting a deep understanding of sketching among lecturers and students (RQ2A),

2. building students' confidence so that they are not afraid of making mistakes in the sketching process (RQ2B),
3. structuring the pedagogical process more (RQ2C).

Regarding the first suggestion (RQ2A), students recommend explaining the purpose of sketching (“Just explain why sketches are important” (S4)) and believe that learning to sketch would be enhanced by the high relevance of the tasks to the profession (“In drawing we just had to sketch different interiors... I know that in the future I will have to design an interior for a client, and it will be easy to sketch it all to visualise the main idea” (S3)). Several students expressed the need to be able to sketch in a way that they can understand the sketch. It is also essential that other people can understand what is being sketched (“People need to be able to present their idea to others and themselves in such a way that they understand what the result we want to achieve is” (S6); “The main thing in sketching is to sketch the idea so that it can be read” (S4)).

The second topic (RQ2B) includes student recommendations about different sketching tasks, materials, and tools (“[I]t seemed interesting that you should not take your hand off the paper. And then I think that these restrictions allow me to feel freer about the sketching process” (S6); “A pen that cannot be erased and corrected. One must try at once to achieve the right proportions and dimensions and position, and there will be no erasing and correcting, as is customary in a drawing” (S5); “It is best to use some thicker markers. The thicker the markers, the more freedom there is. There is no subtlety” (S4)). Students consider assignments where they can sketch not only objects chosen by the lecturer but also objects chosen by the students themselves to be successful (“I would like compulsory sketchbooks, but only if we had more freedom. If we could also sketch what we want, not just some compulsory settings in drawing lectures” (S1)). In addition, students recommend creating a relaxed atmosphere and using the game method (“For example, music. It could be one of the first steps to feel that freedom, not to give a specific task right away. Then they could open more to sketching” (S6); “I liked that everyone had three minutes to sketch one landscape from the 18 pictures available and then had to guess which sketch matched which picture. It seemed quite exciting; the kids would like it too” (S3)).

For successful sketching, students advise using different types of examples, including studying and copying artists' sketches (“Show artists' sketches. I have not seen many. Artists have very loose sketches to start with. It helps to visualise how to sketch” (S4); “There was an exercise in the drawing: the teacher made us study three or four sketches ... and make the same one. It was useful” (S1)).

There are contradictory views on the time limit: some students recommend making sketches quickly, within a tight time limit, but others point to it as a hindrance. Students also point to the time limit per sketch as a hindrance on the one hand but, on the other, as useful for developing sketching (“The most helpful tasks are those where we need to sketch something quickly in a limited time because then we do not have time to pay attention to small details. We must feel the essence of it” (S2); “I also really liked the quick tasks” (S7)).

The third category of answers corresponds to recommendations to structure the pedagogical process more (RQ2C). The study process can be planned more often, e.g., sketching in sketchbooks at the beginning of each lesson (“If it was the first five minutes of every lecture, each of us would sketch in our notebooks” (S7)). Students recommend saving sketches so they can be compared and evaluated later on (“In the long term, sketches are important because they add to a person’s visual library, and it develops observation... Do not destroy sketches; explain their importance. It is stressful initially, but the more you do it, the easier it becomes” (S9)). The focus group interview also suggests that sketches should not be evaluated (“I do not think the teacher should assess it in any way; it is one stage of the process” (S6)).

However, there are conflicting views among students about the number of sketches to be made for a given task. Not everyone is in favour of the lecturer setting the number, and for some, one or two sketches are enough (“I don’t think you can set the number of sketches like that; someone might decide with the second sketch that he will make this product. For somebody else, 30 will not be enough, and he will think he needs some fine detail. Students should not be asked for a number of sketches. Everyone needs his own number of sketches until he can design” (S3); “Quantity matters; you must make several to have different sketches. You can combine something, cut something so there are different ideas” (S9)).

Stage II: Survey

Based on findings in the focus group interview, a survey with 30 questions was designed. Two questions were designed to find out information about the respondents, seven to find out respondents’ opinions about conditions that interfere with sketching, and 21 questions to find out the respondents’ opinions on learning to sketch. These questions were structured in three groups (understanding of sketching, confidence in sketching and structuring the sketching learning process) according to the findings from the focus group interview and the suggestions of Thurlow et al. (2019). The survey employed 28 multiple-choice questions, 26 using a Likert scale ranging from 1–5 (see Pipere, 2016a; Geske & Gr̄infelds, 2020). Two open-ended questions were added: one to elicit respondents’ views on the nuisances of sketching and the other to elicit the respondents’ views on learning to sketch.

The survey was distributed electronically to PBSP “Art” students, PBSP “Teacher of Design and Technology” students and PBSP “Teacher of Primary School Education” students for study years 1, 2, 3 and 4 in the spring semester of 2023. Sketching was part of the study process for all respondents. The survey was voluntary and anonymous; the data was used only in aggregate form. Answers to open-ended questions were given codes. The Research Ethics Committee of the University of Latvia determined that the study complied with research ethics principles and personal data protection requirements under Latvian law. The results of the survey were analysed quantitatively and qualitatively.

Results of survey

Electronic surveys were received from 55 respondents. All respondents were studying on PBSPs: 54.5% were studying on the “Art” programme, and 45.5% were studying to be teachers (30.9% to become primary school teachers and 14.6% to become design and technology teachers). The most significant number of respondents are 6th-semester students (36.4%), followed by 8th-semester students (32.7%), 4th-semester students (25.5%) and 2nd-semester students (5.5%). Each respondent is assigned a code (N1–N55).

Regarding the nuisance of sketching (RQ1), the results of the questionnaire confirmed that some students are hindered from sketching by a lack of sketching skills (61.9%), inconsistency of sketching results with visualisations in their imagination (58.2%) and a lack of sketching experience (56.3%). In addition, 47.3% of respondents pointed to limited time as a barrier to sketching. Fewer students agreed with the statements that a lack of time (27.3%) and not seeing the point of sketching (7.3%) are obstacles to sketching (Table 1).

Table 1 Distributions of answers to questions about the nuisances of sketching

Statement	Strongly agree	Rather agree	Neutral	Rather disagree	Strongly disagree	<i>M</i>	<i>SD</i>
Sketching is hindered by inexperience	13 23.6%	18 32.7%	9 16.4%	5 9.1%	10 18.2%	3.42	1.40
Sketching is hindered by my lack of sketching skills	14 25.5%	20 36.4%	4 7.3%	8 14.5%	9 16.4%	3.42	1.41
Sketching is hindered by my sketches not matching the desired outcome/ visualisation in my head	17 30.9%	15 27.3%	7 12.7%	8 14.5%	8 14.5%	3.45	1.44
Sketching is hampered by the time limit for a given “quick” task, e.g., 1 minute per sketch	15 27.3%	11 20.0%	11 20.0%	9 16.4%	9 16.4%	3.25	1.44
Sketching is hampered by the fact that it takes time	6 10.9%	9 16.4%	18 32.7%	10 18.2%	12 21.8%	2.76	1.28
What stops me from sketching is that I do not see the point of sketching	1 1.8%	3 5.5%	10 18.2%	11 20.0%	30 54.5%	1.76	1.05

Note. Some rows do not add up to 100% due to rounding, and the data has no statistical errors.

The respondents' answers to the open-ended question on what else they would like to add about the obstacles to sketching echo the reasons already mentioned: a lack of skills and experience, and the mismatch between sketching and visualisation in the imagination. In addition, five respondents (9.1%) answered that a lack of inspiration was a hindrance.

Regarding sketching as a learning approach (RQ2), the answers can be summarised in three groups.

1. *Understanding of sketching (RQ2A)*. 89.1% of respondents think that lecturers need to justify the importance of sketches, and 83.7% think it is important to articulate the purpose. 89.1% agree with the statement that it is necessary to sketch so that they can understand the sketch themselves, while fewer (76.3%) think that it is essential that their sketch can be understood by others. 76.4% of respondents consider that sketching tasks should be related to future professional activities (Table 2). In response to an open-ended question, one of the respondents wrote, "All lecturers should agree on what counts as a sketch because definitions vary a lot between lecturers, and this causes stress and uncertainty" (N7).

Table 2 Distributions of answers to questions about learning to sketch (understanding of sketching)

Statement	Strongly agree	Rather agree	Neutral	Rather disagree	Strongly disagree	M	SD
Successful learning of sketching requires justification of the usefulness of sketching	37 67.3%	12 21.8 %	5 9.1%	0	1 1.8%	4.53	0.81
To learn sketching, it is recommended to formulate a sketching goal	32 58.2%	14 25.5%	7 12.7%	1 1.8%	1 1.8%	4.36	0.91
It is recommended to use tasks related to future professional activities to learn sketching	25 45.5%	17 30.9%	8 14.5%	5 9.1%	0	4.16	1.00
It is vital that the sketch can be understood by people other than the author	18 32.7%	24 43.6%	6 10.9%	6 10.9%	1 1.8%	3.96	0.98
It is essential that the sketch created can be understood by the author	32 58.2%	17 30.9%	4 7.3%	1 1.8%	1 1.8%	4.41	0.85

Note. Some rows do not add up to 100% due to rounding, and the data has no statistical errors.

2. *Confidence in sketching (RQ2B)*. Almost all respondents (98.2%) agree that a relaxed environment is recommended for learning to sketch. 90.9% support the statement that sketching should be taught using objects chosen by both the teacher and the student. 89.1% agree that they must learn to sketch to visualise their ideas. Fewer respondents (74.5%) support the use of the game method. 76.4% of respondents appreciate the importance of samples in general, 69.1% recognise the value of studying artists' sketches, and 63.7% acknowledge the value of copying artists' sketches. 76.4% of students agree with the statement that it is necessary to use a variety of materials. However, the use of specific materials, such as materials that cannot be erased or used to draw details, is supported by fewer respondents – 61.8% and 47.3%, respectively. 72.7% agree that it is necessary to include time-limited tasks, while 16.4% are against it, and 10.9% are neutral. 69.1% of respondents agree on the need to include a task to sketch an object without taking their hand off the paper (Table 3).

Table 3 Distributions of answers to questions about learning to sketch (confidence in sketching)

Statement	Strongly agree	Rather agree	Neutral	Rather disagree	Strongly disagree	<i>M</i>	<i>SD</i>
For sketching, it is recommended to give tasks with a time limit (e.g., 3 minutes)	24 43.6%	16 29.1%	6 10.9%	6 10.9%	3 5.5%	3.96	1.23
A variety of materials are recommended for learning to sketch	38 69.1%	10 18.2%	4 7.3%	3 5.5%	0	4.51	0.86
Learning to sketch requires the use of materials that cannot be erased	15 27.3%	19 34.5%	8 14.5%	8 14.5%	5 9.1%	3.60	1.16
Learning to sketch requires the use of materials that cannot be used to draw fine detail	12 21.8%	14 25.5%	13 23.6%	8 14.5%	8 14.5%	3.25	1.35
For sketching, it is recommended to give the following task: sketch an object without taking your hand off the paper	25 45.5%	13 23.6%	12 21.8%	5 9.1%	0	4.05	1.03

Statement	Strongly agree	Rather agree	Neutral	Rather disagree	Strongly disagree	M	SD
The game method is recommended for learning to sketch	22 40.0%	19 34.5%	14 25.5%	0	0	4.15	0.80
It is recommended to use an environment that creates a relaxed atmosphere for learning to sketch	45 81.8%	9 16.4%	1 1.8%	0	0	4.80	0.45
For sketching, it is recommended to sketch objects chosen by both the lecturer and the student	38 69.1%	12 21.8%	4 7.3%	1 1.8%	0	4.58	0.71
To learn sketching better, it is recommended to use a variety of examples, including videos	24 43.7%	18 32.7%	10 18.2%	1 1.8%	2 3.6%	4.11	1.01
Learning to sketch requires studying artists' work	26 47.3%	12 21.8%	9 16.4%	8 14.5%	0	3.98	1.10
For sketching, it is recommended to give the following task: make a copy of the artist's sketch	14 25.5%	21 38.2%	12 21.8%	4 7.3%	4 7.3%	3.67	1.16
You need to learn sketching to visualise your ideas	37 67.3%	12 21.8%	3 5.5%	2 3.6%	1 1.8%	4.49	0.90

Note. Some rows do not add up to 100% due to rounding, and the data has no statistical errors.

3. *Structuring the sketching learning process (RQ2C)*. Regarding the structuring of the sketching process, respondents most agree (92.7%) on the idea that sketches must be kept to assess progress. 83.6% agree that a small amount of time should be set aside for sketching at the beginning of each session. 78.2% think a specific number of sketches should be defined. Although many students (80%) agree that sketches should not be marked, four disagree, and seven give a neutral answer (Table 4).

Table 4 Distributions of answers to questions about learning to sketch (structuring the sketching learning process)

Statement	Strongly agree	Rather agree	Neutral	Rather disagree	Strongly disagree	M	SD
To learn to sketch, sketching exercises at the beginning of each lesson are recommended	29 52.7%	17 30.9%	7 12.7%	2 3.6%	0	4.40	0.76
Sketches need to be kept so that progress/dynamics can be assessed	38 69.1%	13 23.6%	4 7.3%	0	0	4.62	0.62
For successful learning of sketching, it is recommended to define the number of sketches for each task	25 45.5%	18 32.7%	11 20.0%	1 1.8%	0	4.20	0.83
To improve sketching skills, it is advisable not to mark sketches	24 43.6%	20 36.4%	7 12.7%	3 5.5%	1 1.8%	4.15	0.97

Note. Some rows do not add up to 100% due to rounding, and the data has no statistical errors.

In addition, in response to an open-ended question about what else they would like to add in order to learn sketching better, eight respondents (14.5%) indicated that they should sketch more often (“Sketching should be introduced in other subjects” (N1); “Make sketches more often because I rarely do it” (N23)).

Regarding the first research question on sketching barriers, this study confirms the findings of Booth et al. (2016) that students’ sketching is hindered by a lack of skills and experience, as well as a tendency towards perfectionism, being unable to sketch their idea or object according to the visualisation in their imagination.

Therefore, sketching skills must be promoted in the study process so that experience is also built. In addition, it is vital to demonstrate different examples so that students understand that sketches are part of a process and take different forms, including unfinished ones.

In the focus group discussion, there were conflicting views on the assessment of sketches and the number of sketches in the assignment conditions. In contrast, the preponderance of responses to the questionnaire clearly shows the students’ opinions: 80% of respondents think that sketching should not be assessed, and almost as many (78.2%) think that the number of sketches for assignments should be fixed. However, in order to be able to assess progress, every sketch should be kept. The students agree with this and show that they are interested in developing their sketching skills.

Regarding the second research question on the learning approach, most students agree that learning to sketch requires a relaxed atmosphere. Many support the use of the game method. Students appreciate the need to deepen their understanding of sketching and the regularity of sketching. The recommendations for learning to sketch explored in theory (van Passel & Eggink, 2013; Thurlow et al., 2019; Williford et al., 2019) are supported by both the focus group discussion and the survey results.

A limitation of the current research is the small number of respondents in general and the differences in the specificity of the programmes in which the respondents study. This affects students' understanding of the purpose of sketching and the importance of tasks and techniques.

Overall, the study shows that students appreciate the need for a deeper understanding of the sketching process, a varied learning of sketching skills in a relaxed atmosphere, and a more structured pedagogical process. One respondent's suggestion that all lecturers should share a common understanding of a sketch is noteworthy.

Knowing and respecting students' preferences is essential to make sketching a value-embedded education. Tasks in which students use others' sketches should be developed to help students understand the importance of others' understanding of what is being sketched.

Conclusions

Sketching can become a self-determined value if the guidance detailed in this study is implemented. This study has led to recommendations for organising the study process as it relates to sketching and compiled them in a set of activities.

The first suggestion is to explain and demonstrate the examples. When learning sketching skills, more attention should be paid to examining study works and artists' sketches. It would be advisable to design special exercises to interest students in the study of works of art. For example, students could be asked to study sketches by a particular artist and then create their own sketches inspired by the technique(s) used by the artist. A slightly more challenging task would be to create a three-dimensional model (e.g. of a vase) based on an artist's sketch.

Secondly, flexible tasks that match students' interests and career choices should be developed. It is recommended that students sketch objects chosen by the lecturer as well as objects chosen by themselves and that tasks for sketching ideas are offered. It is important to link the assignments to the qualification the students are studying for. For example, interior design students should practice sketching different interiors (both real and imaginary), while future primary school teachers should try out sketching exercises that they can later present to their pupils.

Thirdly, it is useful to develop practical skills in different assignments using a variety of techniques and materials, work sizes, and time limits.

Fourthly, lecturers should ensure the regularity of sketching, for example, by using an approach that involves sketching at the beginning of each lesson and regular drawing in a sketchbook.

In the future, it will be necessary to develop a model for learning to sketch, taking students' suggestions into account, validate it, and, after validation, organise a focus group discussion and a questionnaire to find out whether sketching has become a self-determined value for students.

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