

# A MINIMUM VIABLE SERVICE TO FACILITATE INTERNSHIP FOR DESIGN STUDENTS

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## ABSTRACT

This paper poses the question how design students perceive organisation and learning outcome of an internship if the resources facilitated by the university is based on a minimum viable service. Data is gathered from a longitudinal study in the period 2008 to 2018, where students from the Department of Design participated in a 10 ECTS elective internship course. We aimed at balancing available resources with student learning, offering a minimum viable solution.

The students were fully responsible to establish contact with a business and make an agreement to conduct an internship. The business was responsible to provide students with a supervisor. University responsibility was to formalise and ensure quality. The main scope of the course included 180 hours of documented work in a business and a written internship report. The internship reports should answer to the course description and assignment criteria and have been the main data source for the study. A qualitative analysis has been performed and the results are then categorised and quantified to map the level of students' knowledge and skills. Kirkpatrick's evaluation model has been used together with learning outcome and the course assessment criteria. Findings from the study show that students seem to be satisfied with the organisational structure of internship. They also seem to benefit from the imposed responsibility, but there is no evidence of extended self-awareness, reflection, and critical thinking.

*Keywords: Internship, experiential learning, work integrated learning*

## 1 INTRODUCTION

Internship is an established form of teaching and learning in various Norwegian study programmes. Several of the study programmes are directed to have mandatory internship, defined in framework plans given by Ministry of Education and Research. Examples are nursing with 90/180 credits [1] and teachers' education with a minimum of 110 days [2]. The collective agreement for journalists encourages members to strengthen journalist education by establishing internship sites <sup>1</sup>. In 2019 26% of Norwegian students was offered a mandatory internship, and 21% was offered an elective internship [3].

A series of reports from the Norwegian Agency for Quality Assurance in Education (NOKUT) is investigating internship in Norwegian study programmes. One statement is that internship is a quite resource demanding form of teaching, from both a study programme leader, mentor, and administrative point of view [4]. Higher requirement of quality assessment, new data protection regulation, and a follow-up of mentors and students result in an increased use of resources for the study programme leader. An increased number of students leads to a need for more internship sites [5]. According to many of the mentors, time and resources are important issues. Lack of time, lack of economic compensation, and high number of students could be a challenge. At the same time, communication is pointed out as important [6]. Communication about the planning and information about the student(s) are mentioned as relevant issues. Apart from the mentioned reports, the question on use of university resources on internship implementation does not seem to have focus in the available literature. This study makes use of a case where an elective internship course was established, trying to balance available resources with student learning. The aim was to offer a high-quality course with a low-level budget.

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<sup>1</sup> Journalism newspaper agreement between union and employer's association (NHO/MBL and NJ) § 13.2:  
<https://www.nj.no/dokumentarkiv/journalistavtalen-for-mbl-avis/>

*This paper poses the following question: how students perceive organisation and learning outcome of an internship if the resources spent by the university are based on a minimum viable service to facilitate the design students.*

Focus will also be directed towards the sacrifices made to achieve this, showing how downscaling university supervision, increasing the student's responsibility, and increasing requirements for student active learning affect the outcome of an internship period. Data is gathered from a longitudinal study in the period 2008 to 2018, where students from the Department of Design at NTNU participated in a 10 ECTS elective internship course within three bachelor programmes. The findings will be used to recommend how to prioritise available resources towards student learning when establishing an internship course.

The paper will start by presenting relevant theory and describe the methods used. Then the structure of internship as a learning activity will be explained before the findings from the student reports will be presented within a set of predefined categories. The study concludes with a recommendation.

## 2 METHOD

The study is based on action research, and in compliance with Levin [7] perspectives. An ethical question is related to the fact that the researcher also has possessed position as course responsible and study programme leader. The benefit from a double role is the in-depth knowledge about the activity being researched. One challenge could be that the researcher has blind spots [8]. To meet this problem, the research strategy is presented in a transparent way to easier become verified by others [9].

The empiric data contains 78 internship reports. They are analysed qualitatively, then the data are categorised and quantified. A summary of the quantitative data is presented with comments and assumed implications. For the analyses of data, a customised version of Kirkpatrick's evaluation model is being used [10].

*Table 1. Evaluation model*

Category	Description	Sub-categories
Reaction	An evaluation of how the participants find the training favourable, engaging, and relevant.	Process, work task and relevance, workload and schedule, internship site, supervision
Learning	To which degree the participants acquire the intended knowledge, skills, attitude, confidence, and commitment.	Recognising tools, methods and procedures, team, and communication, apply own knowledge, business culture, student active learning
Behaviour	The ability to reflect on internship as experiential learning.	No sub-categories
Result	Indicating if targeted learning outcomes would give further career advantages.	No sub-categories

The model was developed for evaluation of business training programmes and contains four main categories. The customised version is also inspired by Praslova's Adaptation of Kirkpatrick's four level model of training criteria to assessment of learning outcomes and programme evaluation in Higher Education [11]. In this paper the learning outcome and assessment criteria from course description are entered into sub-categories of the 'reaction' and 'learning' categories. Since the categories 'behaviour' and 'result' in Kirkpatrick's evaluation model are defined as external criteria, they are likely to be influenced by factors other than learning. This could be in an organisational or economic context. 'Behaviour' will in this context have a focus on the learning context, and 'result' will focus on additional outcomes like employment and career opportunities. The four categories with description and sub-categories are to be found in Table 1.

## 3 THEORY

This research is based on the theoretical paradigm closely related to individuals and community, internship, and experiential learning. Terms like practice, praxis and practitioners are discussed by Whittington [12]. He points towards that performing actions depends on the knowledge and skills possessed by each individual. This context could be used to elaborate on the distinction between agreed

practice and the performed practice in a business. This leads to the assumption that the practice established through common understanding, culture and understanding also needs to be interpreted by everyone. In this context, agreed and performed practice could deviate. An internship student could experience that situations are handled differently by different people in the same organisation. On the other hand, Nicolini [13] states that practice theories are based on the relationship between individual and community. Practice must be accepted as joint achievements in a mutual dependent situation. With a focus on practice and community, interaction, collaboration, and co-production seems more important than functions and hierarchies.

Experiential learning is described by Kolb [14] and Schatzki, Cetina, and Savigny [15] as learning directly connected with realities. They emphasise the significance of strengthening the connection between education, employment, and individual growth. In this way a necessary connection between professional competence with corresponding learning outcome could be established.

According to Lave and Wenger [16], all learning is located to social situations, and learning would likely happen in a community of practice. Wenger [17] states, «Since the beginning of history, human beings have formed communities that share cultural practices reflecting their collective learning». The term legitimate peripheral participation is being used to describe how participation in a community could take different forms, and that individuals' affiliation could be more or less comprehensive [16]. In their conceptual model, Hatchuel, Le Masson [18] emphasise the importance to understand the connection between use of a tool, and the culture in which the tool is being used. In this understanding, learning to use a tool in the university is different than using the tool in a workplace.

#### **4 IMPLICATIONS OF INTERNSHIP WITH A MINIMUM VIABLE SERVICE**

In 2008 an internship course was established as an elective, available for students at the Department of Design. The criteria were that an internship should be an extension of the classroom, learned skills should be transferable, run for a defined period, learning objectives are defined and mentoring is performed by a professional [19]. The decision was grounded both in the wish of adding a more experiential learning [13, 14] to the curriculum, learning as part of a social practice [16] and a wish from students to increase the practice-based part of their education. As mentioned by Kantardjiev and Wiggen [4], managing student internship could be resource demanding. Thus, on both study programme level, department level, faculty level and university level, decisions need to be made regarding the extent and the role internships should take in order to balance available resources with student learning. In practice this could mean that resources are limited and that teachers must make do with minimum viable solutions. The case used in this study managed within a budget corresponding 70 man-hours.

##### **4.1 Organising the internship course**

Establishing the course and making sure to take care of the core principles of experiential learning in a community of practice [16], and to fulfil the academic learning outcome, was of high importance. A 10-credit elective course was offered in the third year of three bachelor programmes. The third-year students were considered the most mature and independent. With an elective course one could assume fewer, but more motivated students than if the course were mandatory. Calculated workload was 250 hours of which minimum 180 hours present in business and up to 70 hours organising and reporting. Responsibility was shared as follows: 1) The students have full responsibility to contact and agree with the business about an internship period, organise the period, and reporting back to university. Two report deliveries have two different intentions: the status report is intended to keep university attention on how each intern progress. The full internship report is to be graded. 2) The business is responsible for serving relevant work tasks and mentoring the student. Leaving the mentor role to the business create both a risk and an opportunity. A risk because quality could be more unpredictable, an opportunity because of disconnecting the university culture. 3) The university verifies, accepts, and formalises an agreement, to ensure quality before starting up, and involves the mentor in evaluation and grading. A start up seminar has also been provided. The mentioned sharing of responsibility is supported by Sweitzer [20] describing the successful internship. The key features of success relate to engagement, and to be active and take responsibility are key factors.

#### **5 STUDENTS' PERCEPTION – DATA FROM THE INTERNSHIP REPORTS**

In the period 2008-2018 78 students from the Department of Design have fulfilled the internship course, one student started an internship but dropped out. During the years 2008-2016 the number of students

increased from 2 and up to 8 students annually. During the years 2017-2018 this increased to 11 and 17. The internship course was not offered in 2019 and was implemented as mandatory in 2020. Internship reports (2008-2018) delivered at the end of the internship period will be analysed in this chapter. From the statistics it seems like the students are eager to find an internship site of interest. Since almost 40% of the students choose an internship site located more than one hour travel away from campus, it seems like relevance is prioritised before distance. Workload is documented in the reports and confirmed by the supervisors to be at least 180 hours at the internship site. There is no evidence in amount of work hours spent on planning and documentation.

## 5.1 Data from the internship reports

The analyses of the internship reports are based on Kirkpatrick's evaluation model. The four categories reaction, learning, behaviour, and result, with corresponding learning outcomes from the course description, are being used to describe student perception of participating the internship course.

The analysis is done by objective evaluation of written statements with focus on how the candidate describe his/her experience of each of the categories. The score indicates whether the candidate is highly satisfied (1), satisfied (2), less satisfied (3) or not satisfied (4). Last score is if the category is not mentioned at all (5).

*Table 2. Reaction, an evaluation of how the participants find the training favourable, engaging, and relevant*

Highly satisfied	Satisfied	Less satisfied	Not satisfied	Not mentioned
42%	10%	11%	2%	35%

The category reaction should measure the level of participants satisfaction and if the participants find internship favourable, engaging, and relevant. The sub-categories are mentioned in Table 1.

Findings show that the students' reactions are mainly positive. 52% of the reports contains statements that indicate satisfaction "highly" or to "some degree". The sub-category "Process" stands out by not being mentioned in 76% of the reports. Somehow this does not match with the corresponding category "student active learning" in the next section. Also, the sub-category "supervision resources" have a higher rate of "not mentioned" in the reports. Only 2% of the reports contain description of any negative experiences with supervision, and those are mostly about lack of resources. It seems like many of the reports document an expectation that being an intern equals independent work.

*Table 3. Learning, to which degree the participants acquire the intended knowledge, skills, attitude, confidence, and commitment*

Highly satisfied	Satisfied	Less satisfied	Not satisfied	Not mentioned
58%	12%	14%	0%	16%

The category learning relates to the course learning outcome and assessment criteria. The analyses focus on conveyed improvement of knowledge and enhancement of skills. This also include change of attitude, confidence, and commitment. The analyses have focused on the sub-categories mentioned in Table 1.

Findings show that the students' reactions are mainly positive. 70% of the reports contains statements that indicate that satisfaction is "highly" or to "some degree". The sub-category "team and communication" gets the lowest score with 49% "highly" or to "some degree". With the expectations of internship as high level of independence, this do not need to be negative. As mentioned in the previous section, "student active learning" get a quite high score with 58% "highly" or to "some degree", and a negative statement is only found in one report. In 24% of the reports the topic is not mentioned. This leaves an impression that being student active is considered to be a positive requirement. "Team and communication" are also considered to be important parts of the internship learning the learning outcome could be influenced [16]. The score is close to 50%.

*Table 4. Behaviour, what students learned during training*

Highly satisfied	Satisfied	Less satisfied	Not satisfied	Not mentioned
14%	13%	25%	3%	45%

Behaviour is about change of attitude and whether the students can apply what they learned. This is also about whether the candidate shows the ability to be critical and reflective about their experiential learning. Almost half of the reports does not mention anything about this, 27% is "highly" or to "some degree" positive, and 3% states some negative experiences. Being aware of a change of behaviour is

highly connected to the ability to reflect on a learning experience. It seems like the low score in this category could be due to either lack of ability to reflect, or that this topic has not been seen as important when writing the report.

*Table 5. Result, indicating if targeted learning outcomes would give further career advantages*

Highly satisfied	Satisfied	Less satisfied	Not satisfied	Not mentioned
12%	13%	13%	3%	59%

Result is the category where it is considered whether the targeted outcomes would give further career advantages. The candidate should reflect on their goals and whether they have achieved more than described in learning and behaviour. In 25% of the reports, it is stated that interns are “highly” or to “some degree” satisfied. Typical answers would be better knowing your career direction, understanding other educational issues, or getting a job offer. In 59% of the reports this category was omitted. It would have been noteworthy to also know the experience from those students.

## 5.2 A corresponding survey

A survey conducted with a group of alumni design students showed that they appreciate internship as a course giving insights to important topics as creative processes and knowing the use of important tools [18, 21]. Another finding was that students find internships realistic and see it as an experience preparing for working life. The internship was appreciated also because the students felt it helped them prepare for workload and expectations from a future employer.

## 6 RECOMMENDATIONS

Using a minimum viable service means a trade-off where less faculty involvement results in more responsibility for each student. Nevertheless, when a mandatory internship is established, the university must be responsible to ensure that all students will be in connection with an internship site. A formal network of businesses is established to support this concern. To assist the time-consuming management of networking and internship issues, a web application is developed. The application will support both student active processes and formal activities like communication, internship applications, signing of contracts, and mentor feedback (ready to be used fall 2021).

Engagement is one of the key features of a successful internship [20]. The students seem to be able to bring the active and engaged position created by the search and apply process further into the internship period. This was probably one of the benefits from using the minimum viable service. The process where students are responsible to approach businesses and apply for an internship will be continued, now supported by the network of available businesses. This active start will hopefully continue to bring a boost to the student engagement, resulting in an increased learning outcome.

By nature, the learning outcome from an internship is dependent on the student, the internship site, and the supervisor. Both being supervised and participating a team is important in the sharing of cultural practices and collective learning [9, 10]. One challenge is that learning outcome from an internship period is also dependent on the business attitude towards supervising and available work tasks. One might need to accept that a diversity within supervision is present, thus resulting in a diversity in learning outcome at different internship sites. This difference could be balanced by the student being active in seeking supervision and to become a part of the community of practice at the internship site [17]. Also, a more active use of the business network could increase engagement between business and university, resulting in awareness about the shared responsibility. Despite the less predictable situation when using business mentors in supervising the students, this feature is recommended to continue. This is because the assumption that learning outside the university culture is more important [14, 15] than offering equality.

For the students to be able to understand change of attitude and the result of an internship, they must be able to reflect on their participation [9] and how they apply new knowledge. Findings show that the student’s ability to achieve this is quite low. This could be because of the minimum viable service. To extend self-awareness and critical thinking, the start-up seminar needs to add an increased focus to this aspect. In addition, the students should be obliged to hand in a preliminary version of the internship report to enable feedback before making the final delivery.

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