Learning in Practice: An Ethnographic Exploration of the Meaning of Learning at a Maritime Training Institute

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Abstract

This study aims to understand the classroom pedagogy followed in an elite, reputed maritime academy in India and the lives of cadets undergoing training there. Data is drawn from an ethnographic engagement of the researchers (authors) with the cadets in their life-world inside the academy which facilitated a firsthand exploration of the cadet life, generating valuable insights about their daily routine, social interaction and academic life. Employing focus-group discussions, classroom observation and pre-test and post-test methodologies, the study revealed the demanding nature of cadet-life emergent from rigorous training practices, strict discipline and exposure to challenging tasks which come from diverse instructional methods which instructors adopt. The study indicates that the pedagogic instructions emphasise on building essential maritime skills and knowledge through practical demonstrations and simulations exercises following the situatedness of cognition around the tasks. The study further unpacks a deeper understanding of the challenges of practice and meaning making processes within a practice as faced by cadets which enable development of support systems and interventions to enhance their well-being and success during maritime training.

Keywords: Training, Work and Education, Cognition, Learning, Profession

Introduction

Maritime training institutes play a crucial role in preparing cadets for the demanding and complex world of seafaring. The education and training provided in these institutions are essential for developing the necessary skills, knowledge, and resilience required to navigate the challenges of a maritime career. The nature of education and training provided in the institute have a direct link with the kind of work the cadets opt for in future. This makes the institute an interesting ground for understanding the relationship between work and education. We investigate this complex relationship in this paper from the lens of situated cognition. There is little research which investigates the meaning of learning and cognition while both the latter are situated in the work-practice of seafarers. There is little that is known about maritime cognition and research on learning in maritime practice, and how cadets' life-worlds shape these. In this paper, we explore the meaning of learning in maritime cognition and practice and how learning is seen as situated in 'doing' tasks pertaining to seafaring. Invoking Brown, Collins and Duguid's (1989) framing of situated cognition, we have analysed instances from the classroom pedagogy to answer the following questions:

1. What are the interconnections between the training curriculum (learning) and cadets' future roles as seafarers (practice)?
2. How do cadets' life-worlds inside the maritime academy shape cognition of practice?

Changing meaning of learning in practice, work and education

The training of seafarers has traditionally been narrow, concentrating solely on their professional skills. The definition of competent seafarers has predominantly revolved around their proficiency in navigation and engineering. Nevertheless, the presented evidence suggests that these skills often prove insufficient when it comes to effectively handling the challenges and intricacies of life at sea (Smith, 2016). Researchers have highlighted how traditionally building of conceptual understanding is derived from the situations they are embedded in (Brown et al., 1989), but it is only recently that problems are seen as part of the discourse of an activity and therefore socially constructed (Kirsh, 2009). In fact, Kirsh argues that situatedness of the problem-tasks reveal "how much the machinery of inference, computation and representation is embedded in the social, cultural and materials aspects of the situations" (Kirsh, 2009, p. 265). In this emergent notion of learning in practice from the connection between work and education (see NCERT, 2007), researchers have argued that cognitive apprenticeship helps in understanding the situatedness of cognition in practice and the situated nature of learning.

The Position Paper National Focus Group on Work and Education (2007) recommends that active engagement in real-life scenarios is crucial for effective learning, as it enables the acquisition of knowledge, values, and skills. Involvement in productive work fosters comprehensive development across cognitive, affective, and psycho-motor domains, integrating head, heart and hand. Existing education systems often lack these multidimensional attributes, leading to widespread incompetence even among school graduates. Productive work within the curriculum, schools can rectify the information-centric nature of education, aligning it with the practical needs of students. The aim of education should be to liberate people and enable them to lead a healthy and courageous life (Avinashilingam, 1960).

The principles of instructionism form the basis of traditional schooling methods (Papert, 1993). Also, the instructionist curriculum makes a fundamental assumption that childrens enter the school as an empty vessel (Sawyer, 2006). Foundations of learning sciences are laid on principles of constructivism. Learners construct their knowledge based on pre-existing knowledge. They can not be considered a blank slate (Sawyer, 2006).

In the teaching learning process a teachers' professional identity has a role to play. Teacher identity refers to the personal connection and sense of self that individuals have with the role of being a teacher. It is shaped by their fundamental beliefs about teaching and their experiences, continuously evolving over time (Mayers, 1999). A major importance was given to discipline in the training process that was similar to the general school environment. Many schools focus heavily on discipline, considering a student ideal when they sit quietly, follow instructions, and respect their teachers. These traits are seen as important for being a good student (Sarangapani, 2003).

Methodology

The researchers conducted an ethnographic study by participating as observers and living with the cadets at a maritime training institute for a period of two weeks.

The two researchers had some privileges with respect to attendance at certain exercises and drills of the training institute but they were sharing the same living space with the cadets, eating food with them and attending various drills and exercises with them. One researcher being male and other being female stayed with the cadets and shared living spaces with male and female cadets respectively. This approach allowed for a firsthand exploration of the cadet life, providing valuable insights into their daily routines, interactions, and experiences. To ensure a comprehensive understanding of the teaching and learning environment, the researchers selected classrooms for observation based on students' feedback about the teachers. This ensured that classes of popular as well as not-so-popular teachers were observed. The researchers interacted with the faculties and students together and individually as well. Interaction with around fifteen teachers and forty students was done. Detailed note taking was done about the interaction as soon as the researchers got time. The average duration of interaction was around twenty minutes. By observing a range of teaching styles and dynamics, the researchers aimed to capture a holistic view of the pedagogic methods employed at the institute. Additionally, the researchers actively engaged with cadets, wardens, instructors and other staff who work with the students through one-on-one interactions and focus group discussions to gather rich insights into their experiences and perspectives.

In addition to immersive observations, – interviews and –focus group discussions were conducted. At the beginning of each interaction, verbal consent was taken from the participants. Data from ethnographic writings, interviews, focus group discussions and interaction was first organised thematically and analytical memos were created. Researchers went through the data repeatedly and discussions were held. As a result of discussion, certain themes came out of it that are presented in the results and discussion sections of the study.

All the researchers are working in a social sciences institute and have background in science and mathematics education research. Two researchers who stayed on maritime institute campus are in their twenties, one is from mathematics education and one is from STEM background. The remaining three are in their thirties or forties and have been working the area of STEM education for at least 10 years. Two are females and three are males.

Results and discussion

The shipping industry and mariner profession is a specialised domain. It is a closed community or social group of seafarers with a specialised culture. The culture includes tools, jargon, concepts, beliefs and norms. The culture is a product of and situated in the practice of shipping and seafaring (Brown et al., 1989). Becoming a good seafarer means getting enculturated into the seafaring community by actively participating in community activities. While observing the activities in the maritime institute, we saw attempts to introduce the culture of seafaring to the cadets.

The institute campus is designed as a big ship; it has various parts of the ship, such as a deck, bridge, engine room, etc. Cadets have to always be in uniform and change uniforms based on the activity they are performing. Their various activities are also named muster, shore leave, boiler, etc. In classrooms, while teaching, teachers often make jokes about 'seafarers' as different from 'land people'. In the following sections, we present a few themes that emerged during data analysis. Through these themes, we are trying to focus specifically on how learning is happening and how different aspects of cadets' life is oriented to contribute to learning.

Daily life as a cadet - discipline and learning

When students join the maritime training academy, it is an unfamiliar field for them. Thus students are continuously in the process of learning new terminologies, concepts, instruments, procedures, working etc related to the field. At the same time the teaching community in maritime training institutes who were seafarers before, believe in discipline as an important component of the profession and constantly focus on bringing discipline in students through various restrictions and punishments. Teachers' idea of discipline and its importance in cadets' life plays an important role in how learning activities are organised in the institute. We present instances from the observation to highlight the connection between discipline and learning below:

There are four wardens, two wardens stay at the maritime training institute on a rotating basis each day. These wardens are responsible for conducting muster and other morning and evening activities (eg. assigning cleanship tasks), as well as maintaining a disciplined environment in the institute for spaces other than classroom. It is noteworthy that most of the wardens have backgrounds in the Indian Navy and shared a similar value system around the idea of discipline.

Table 21: Excerpt from interaction with a warden

Researcher	Apart from discipline, do you need to ensure anything else in the hostel?
Warden	There is a curve you would have seen, in that we can see 20% of people need more attention, 60% of people are those who need a little attention and there are 20% who almost need no attention. I am working to make everyone disciplined. Also, I am the first point of contact for the students in case of any emergency.
Warden	Discipline is very important, as, if they go to the ship without being disciplined it will become a problem. The students here come from very well-to-do families. They have all the luxuries in life and they can not take pressure if it comes suddenly.

Warden was actually referring to the normal (Gaussian) curve when talking about the percentage of students about whom more work needs to be done in order to make them disciplined (see Table 21).

For this warden, it seems the most important aspect is discipline. In fact, he seems to be implying that getting disciplined is the most important learning.

Perceived routine and real routine on the ship

With the aim of preparing future seafarers for life at sea, the academy has attempted to replicate the daily schedule of the cadets to that of at sea. The day at the academy starts with a 'Muster', which is one of the important components of seafarers' daily routine. While this is carried out to take a headcount at ship during their sailing journey, this exercise in the academy serves as a platform to make important announcements, distributing duties as well as for giving punishments. Muster happens three times a day and cadets are strictly expected to be in their uniform except for the one in the early morning where they are in their sports dress.

This also shows the prominent role of uniforms in seafarers' life. During sailing, seafarers get a period of time to spend ashore which is called shore leave. This term 'shore leave' has been used for the Sunday getaway for cadets from the campus with some restrictions on time and uniform in place.

Training experiences at the academy and the job as a seafarer

We saw a clear bifurcation between theory and practical classes when it comes to the formal teaching of concepts. While theory classes mostly follow the teacher-centric lecture method, workshops with hands-on experiences are more engaging than theories. During the interaction with students, they acknowledge that the workshop is important as those are the knowledge and skills that are going to be helpful for them on the ship. During the focus group discussion with the senior most students who had sailing experience, when asked about the training experiences that has helped them in the ship, classes of navigation using simulations were beneficial and made their navigation experience on sea easier. However, these courses are not mandated by the university but by the management of the academy, which is an impressive decision to give a rich, realistic experience of sailing at sea to the cadets.

The students with sailing experiences also found that many of the theory components related to ships were alien until they came for sailing. 'It was like mugging up for exams', said a student. Few of the faculty believe that real learning happens only on a ship, and the courses that they study in the considerable portions of the classroom academics deal majorly with passing the examinations. While few also opined that 'ship is very different from pre-sea subjects' and pre-sea is more 'syllabus driven' than 'operational base' like that of post-sea. This could be one of the reasons for theory during training in the academy to become more of a rote learning.

Teacher Identities and its impact on the learning environment

What we discussed in the literature review about teacher identity about the personal aspect of being a teacher, encompassing one's sense of identification and emotions related to the professional role has implications on the professional delivery of duties. It is formed and shaped through experiences and is rooted in the fundamental beliefs one holds about teaching and being a teacher (Mayer, 1999). Similar to the status of school teaching as a least favoured profession (Batra, 2005), it was revealed from the discussion with the faculties of the academy that the status of teaching in the maritime sector is also a least favourable one. One can see a sense of great pride towards the profession as a seafarer among students as well as faculties. This is clearly seen in the way students describe their reason to join the profession as well as in the way faculties describe their experiences in the sea.

The teachers in the training academy come from seafaring backgrounds and have very little exposure to teacher training. One faculty said that 'Those who come for teaching are - One, those who are passionate about teaching; Two, those who can't sail or don't want to sail due to family or any other reasons'. When it comes to the beliefs about teaching, there were few faculties who strongly believed in the student centric approach and on the other hand few believed in the teacher centric approach and was a strong convener of rote learning. One faculty (Faculty A) believed that if students learn through rote learning, content will make more sense to students to use it for various applications. In contrast, another faculty (Faculty B) believed strongly in stories and hands-on activity within the classroom. He opined that actual learning happens when students are immersed in the activities that they could connect with the real-time experiences, not by mugging up the syllabus.

These contrasting beliefs are also reflected in their teaching practices. For example, during one of the classroom observations of Faculty A, two students got scolded for discussing the numerical problem given in the classroom as Faculty A did not encourage peer discussions in the classroom. On the other hand, the classroom environment in faculty B's class was more relaxed and students did not fear to discuss or ask any doubts to the faculty.

Closing Remark

The aim of this study was to understand how cadets learn to become seafarers and what role various aspects of institute life play in it. We found that teachers believe it is crucial that cadets are disciplined and their approach to learning is rooted in this belief. When we look at the interconnection between the training and the future role of the seafarers, the connection is prominent in terms of daily routine of the cadets. We can see the explicit efforts made to replicate life at sea. But when it comes to the training experience, it is not always aligned with the experience at sea. It is clearly evident that the reality at sea looks very different from that at the academy and practical workshops and classes using simulations are deemed more beneficial than theory classes with students recognizing the value of hands-on experiences for their future as seafarers. Also, there is a perception that the real learning happens on ship and the theories learnt in classes are mere rote learning for examinations. The identities of the teachers also play a prominent role in the overall training of the seafarers. Their beliefs, perceptions about teaching as well as teachers has mainly come from their intuitive understanding about teaching rather than a scientific base. These identities of teachers shaped by their seafaring backgrounds and limited exposure to teacher training, has further contributed to the contrasting teaching practices observed. Overall, the tension between discipline and learning permeates various aspects of the cadets' daily lives, impacting their training experiences and future roles as seafarers.

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