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The virtual accomplishment of knitting: How novice knitters follow instructions when using a video tutorial

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ARTICLE INFO

Article history:

Received 25 April 2015

Received in revised form 31 October 2015

Accepted 2 November 2015

Available online 14 November 2015

Keywords:

Conversation analysis

Video tutorial

Knitting

Instruction

ABSTRACT

Video tutorials have become more popular as a way for individuals with particular interests to learn practical manual skills. In video tutorials, the expert is not able to monitor the learner's progression, nor is the learner able to seek help from the expert when a particular problem arises. This means, among other things, that learners need to detect, diagnose and correct their errors without assistance from an expert. In this paper we focus on how this is accomplished by individuals attempting to learn how to knit by following instructions from a video tutorial. We show that novice knitters typically do not detect errors when introduced, but only when a first error has caused a number of subsequent incremental problems. Because novice knitters initially fail to identify and diagnose the underlying cause of their problems and have no one available to help them in this work, they tend to repeat the same error over and over again. We also demonstrate, however, that novice knitters eventually turn to the video tutorial as a kind of diagnostic tool; and that when they do so, they typically manage to diagnose and correct the initial error they made and succeed in the instructed task.

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1. Introduction

Traditional manual skills (i.e. skills that were formerly acquired through informal apprenticeship and that involve the handling, creating, or repairing of a physical object), such as skinning a pheasant, weaving a bee skep, gutting a fish, throwing a ceramic pot, and darning a sock, are increasingly taught and learned through video tutorials uploaded for instance to YouTube or to various webpages dedicated to particular types of skills and interests (e.g. Torrey, Churchill, & McDonald, 2009). Video tutorials typically consist of a set of verbal instructions through which the different steps required to accomplish a particular task are described, accompanied by manual demonstrations of how each of these steps are to be performed. Their design is – in this respect – similar to how manual skills are more generally instructed in face-to-face settings, for instance crafts of various types (e.g. Lindwall & Ekström, 2012; Ekström & Lindwall, 2014; Koskinen, Seitamaa-Hakkarainen, & Hakkarainen, 2015), surgical procedures (e.g. Sanchez Svensson, Luff, & Heath, 2009; Mentis, Chellali, & Schwaitzberg, 2014), driving (e.g. De Stefani & Gazin, 2014; Deppermann, 2015), dancing (e.g. Keevallik, 2010, 2014), cooking (e.g. Mondada, 2014), physiotherapy (e.g. Martin & Sahlström, 2010), air traffic control (e.g. Koskela & Palukka, 2011; Arminen, Koskela, & Palukka, 2014) and bike repair (Arnold, 2012).

Video tutorials differ in at least one important way from that of face-to-face instructional settings, however: the instructor and the novice have no real time access to each other. In face-to-face instruction, studies such as those listed above have illustrated the intrinsically reciprocal relationship between instructor and novice, who are, in the words of Lindwall & Ekström (2012: 29) “reciprocally attentive and finely tuned towards each other and the developing skill” (see also Martin & Sahlström, 2010). Thus, while novices may need help from the instructor to see their mistakes and carry out any needed corrections, a novice's

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attempts and mistakes simultaneously enable instructors to adjust their instructions according to the circumstances. In video tutorials, by contrast, the instructor is unable to monitor a novice's progress and adjust instructions accordingly, just as he/she is unable to detect, identify, correct – yet alone preempt any mistakes that may be made by the novice. Vice versa, novices cannot rely on help from the instructor in detecting and diagnosing mistakes or expect any assessments or evaluations to indicate whether they have in fact succeeded in the instructed task.

In this paper, we explore the consequences for instruction and instruction following, when this is done in the context of a video tutorial. We focus on one particular traditional manual skill, knitting, and investigate how novice knitters follow instructions in a video tutorial. Relying heavily on ethnomethodological/conversation analytic work on craft education and “the achieved relation between instructions and instructed actions” demonstrated there (Lindwall & Ekström, 2012: 28, see also Ekström & Lindwall, 2014), our analysis will identify some of the contingencies that arise from the fact that in video tutorials, novices cannot rely on the instructor's monitoring of their progression through the instructed task. Specifically, we demonstrate, first, that novice knitters who follow a video tutorial lack the resources for detecting mistakes upon their introduction and only recognize these as more general trouble at a later stage in the instructed task. Second, that as a consequence of this, novice knitters have to engage in extensive detective work to diagnose the underlying cause of their troubles, something which they frequently fail to do and consequently repeat the same mistake over and over. Finally, we illustrate that novice knitters can make use of the video tutorial as a kind of diagnostic tool; and that when they do so, they are able to detect, diagnose and correct their initial mistake and prevent it from re-occurring, so that they can complete the instructed task.

2. Data and methodological approach

In order to investigate how instructions are followed in video tutorials, we designed a type of natural experiment (e.g. Dunning, 2012), through which we would be able to observe and describe this in detail: We chose a video tutorial available on the internet titled ‘How to Knit – Absolute Beginner Knitting, Lesson 1 – Even if You're Clueless’.¹ This video was chosen based on its title, which suggests that it is designed for novices with no previous knowledge of knitting, and on its relative popularity, which suggests that a large number of people have in fact watched it.² The tutorial, which is the first lesson of a larger course, demonstrates the first basics of knitting, i.e. how to cast on stitches, work the knit stitch and bind off (other stitches, such as purl and seed are demonstrated in subsequent videos). We recruited 9 people to watch the video tutorial, the goal for each person being to complete the instructed task of casting on 15 stitches, then work approximately 8 rows of knit stitches before binding off. The people we recruited were either entirely new to knitting, or had had (very little) experience with it from primary school. The novice knitters included people of both genders, across an age-span of 20–55 years, and all except one were non-native speakers of English. They all used English as their working and primary language, however. The novice knitters were not instructed to use English (or any other language) since the task of following the video tutorial is accomplished exclusively through embodied action. Some novice knitters (as we shall see examples of in the analysis) did however, on occasion, verbalize both frustration and exultation with their progress and this was typically done in English, perhaps because the language of the video tutorial is English too. All participants have given permission for their actions to be video-recorded and used for scientific purposes. Though anonymisation was not required by the participants, we have chosen to change their names, avoid making any overt references to their socio-cultural background and to represent their actions in edited frame grabs.

Our methodological – and analytical – approach is that of ethnomethodological Conversation Analysis, or CA (e.g. Heritage, 1984; Nofsinger, 1991; ten Have, 1999). Generally speaking, CA attempts to take an emic perspective on social action and is interested in revealing how members themselves make sense of what is going on, for instance in an interaction. CA also assumes that interaction is organized through sequences of action: it is thus through the way in which members formulate or produce actions and through the way in which they respond to each others' actions, that the analyst can reveal the members' understanding. Doing a ‘sequential analysis of instruction’ (Lindwall, Lymer, & Greiffenhagen, 2015), we are thus interested here in revealing the details of what each of the novice knitters do and in particular how and where they do it in relation to the instructions given in the video tutorial.

In order to capture this relationship and make it accessible to readers of this paper, we have first documented the tutorial by way of edited screenshots that capture (some of) the instructor's manual demonstrations and transcriptions that illustrate the verbal instructions.³ Given that the total length of the tutorial video is about 15 min (including an introduction of just over 1 min, 2 min and 20 s dedicated to demonstrating how to cast on, 7–8 min on how to work the knit stitch (including how to pick up a dropped stitch), just over 3 min to show how to bind off and weave in the loose end, and a final 2 min postlude) and in order to make our analysis more accessible to readers who have no experience with knitting, we have chosen to focus only on the part of the tutorial in which the cast-on is instructed. Moreover, we have limited ourselves to documenting only the first three iterations of this instruction, which together constitutes a total of 46 s (from 2:14 to 3:00 in the video). A full representation of these 46 s can be found in Appendix A. *Excerpt (1)* provides an illustration of a smaller segment.

¹ Available on: http://www.youtube.com/watch?v=ONVQCK_-rKc

² As of September 15, 2015, the tutorial had been watched 2,335,481 times (according to YouTube), which puts it in the top three of this category of tutorials. Of course, we cannot based on this say anything about whether the tutorial has in fact been followed by actual novice knitters, yet alone whether it has been successful in terms of how many novices have accomplished the skill of knitting based on this particular tutorial.

³ The verbal instructions have been transcribed according to Jefferson (2004).

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