

Final version published as: Lemay, D. J., Doleck, T., & Bazelais, P. (2020). Situative Perspective and Determinants of Technology Acceptance in Educational Technology. In A. Tatnall (Ed.), *Encyclopedia of Education and Information Technologies* (pp. 1497–1500). Springer International Publishing. https://doi.org/10.1007/978-3-030-10576-1_175.

Situative Perspective and Determinants of Technology Acceptance in Educational Technology

David John Lemay¹, Tenzin Doleck¹ and Paul Bazelais²

¹McGill University, Montreal, Canada

²John Abbott College, Montreal, Canada

Synonyms

[Situative perspective](#); [Technology acceptance](#); [User motivations](#)

Technology acceptance studies in education have proliferated in recent years. As education technologies take on more prominent roles in education, it has become necessary to study the antecedent factors to students' acceptance of technology to ensure the adoption of innovative and proven education technologies. Technology acceptance is based on the observation that user motives affect acceptance of technology (Davis 1989). The field of technology acceptance aims to identify the motivational factors determining intentions and use of technology.

The technology acceptance literature is grounded in the cognitivist perspective, taking inspiration from the theory of planned behavior and the theory of reasoned action. Technology acceptance researchers have also been informed

by innovation diffusion theory, social cognitive theory, and self-determination theory, among others, as they have sought to understand the determinants of technology acceptance. Subsequent to Davis' (1989) original formulation of the Technology Acceptance Model (TAM), many extensions have been proposed, reflecting the wide ranging contexts of technology applications. More recently, attempts have been proposed to create a unified theory of technology acceptance and use (Venkatesh et al. 2003). While some have pointed to the proliferation of models as a shortcoming of technology acceptance models, others have argued that the parsimonious character of the core factors of the TAM is a strength, because it recognizes the contextual specificity of technology application situations (King and He 2006; Sun and Zhang 2006; Venkatesh et al. 2003).

The TAM is composed of five key constructs: Perceived Usefulness, Perceived Ease of Use, Attitude, Behavioral Intention, and Use. According to the TAM, the actual use of a technology is determined by the user's behavioral intention to use the technology. The user's behavioral intention is an immediate antecedent to use of the technology; whereas, the user's attitude toward the technology determines their behavioral intentions. Perceived usefulness and perceived ease of use are two fundamental antecedents posited to influence attitudes toward use. The original TAM advanced that perceived ease of use influences perceived usefulness, and perceived

usefulness is also related to behavioral intentions. The TAM has garnered substantial empirical support and is one of the most widely employed models. All the core relationships, save the more questionable link from perceived ease of use to perceived usefulness, have been replicated across a wide range of contexts.

Whereas technology acceptance investigations around exogenous antecedent variables have been focused on user beliefs (Bagozzi 2007), attempts have been made to incorporate situational factors to account for the contextual specificity of technology applications as TAM has historically explained less than 50% of variance in user behavioral intentions (Venkatesh et al. 2003). To the extent that situational factors are considered, they have been often relegated to single factors such as Subjective Norm, Voluntariness, or Facilitating Conditions (Venkatesh et al. 2003). However, the situative perspective (Greeno 2011) militates more broadly for the influence of situation on user's beliefs. In this perspective, a user's beliefs are reflexively determined through their participation in the situated activity and meanings (Gee and Green 1998), and conversely, situated meanings and activities are constituted in users' perceptions of the situation. In practice, meanings, including beliefs, are inseparable from the contexts of use. Concretely, what this suggests is that choices of technology are constrained by the situations and activities that employ the given technological tool to accomplish specific objectives. Thus, participants' choices do not operate independently and technology acceptance cannot simply be conceived as a function of user beliefs. A useful example is provided by social media technologies since the technology represents a platform for community, the affordances of the technology are reflexively determined in the dynamic interactions between individuals and collectivities. In other words, Twitter, Facebook, and Instagram offer greater affordances than any other functional replicas from a horde of copycat social media applications that offer neither the scale nor the depth and range of human contact and ingenuity provided by high levels of social adoption of the preeminent platforms. However, as the founders of these preeminent platforms

recognize, the platforms depend crucially on their communities. Indeed, their value lies in the communities they have built. This inescapable duality is central to the situative perspective. In other words, technology acceptance must be conceived within the frame of activity that the technology in question enables or facilitates – its conditional affordances (e.g., usefulness, ease of use) – but where such technology is integral to the activity, such as the social media platform, we must also consider that the activity itself limits the range of acceptable choices, whether on a socio-organizational, technological, or individual level. You may choose any social media technology from an ever-growing list of options; however, the community or activity that you wish to engage with will dictate the technology that you are required to accept. Such considerations move us beyond the scope of voluntariness, social norm, or facilitating conditions – all which have been conventionally defined with regard to individual cognitions. Increasingly, social media technologies are required for participating in many professional communities or communicating with the marketplace. In these situations, user beliefs such as perceived usefulness and perceived ease of use only provide a partial explanation of individual technology acceptance as determinants of user actions in social contexts are often grounded in social imperatives. To the extent that social participation in a community is contingent on acceptance of some technology, a user will find their choice constrained by necessity.

The situative perspective on technology acceptance holds that situational determinants operate on the whole model, that is, on the core factors and path relationships as well. In other words, according to the context of technology use, certain factors may take on more or less salience. For instance, the workplace has been shown to influence users' behavioral intentions, as employees may have little or no choice in the technology they use (Sun and Zhang 2006; Venkatesh et al. 2003). The influence of the organizational context on user's beliefs is suggestive of a class of moderating influences on technology acceptance that has not received due consideration. Whereas TAM is grounded in user beliefs, little attention has been

given to the influence of the modality of these beliefs on the core TAM constructs. However, such modalities appear to interact with situational determinants to influence contexts of technology acceptance. Doleck et al. (2017a) proposed an organizational matrix, adapted from Sun and Zhang's (2006) synthesis of the literature on moderating factors on the TAM, that illustrates how moderating influences on the TAM can be conceived as resulting from the interaction of situational and modal characteristics. Moderating influences such as voluntariness, individual/group dynamics (i.e., subjective norm), and cultural background are conceived in terms of the modality of necessity, such that a user may feel internally compelled or externally constrained to use a certain technology. Other moderating factors that may determine use as a requirement of the task, activity, or profession may be conceived in terms of the modality of certainty. For instance, where performance stability, safety, trust, or uniformity in application is a requirement of the activity (e.g., failsafe), legacy systems may be preferred even though better options may be available. Finally, technology acceptance beliefs may be classified as a function of the modality of possibility or conditionality (e.g., affordances) where the technology application is oriented to solving complex problems or fostering innovation. Such innovative uses may be witnessed in the rapid and unceasing proliferation of web programming frameworks, all proposing novel solutions and providing new extensibility to the original problem of delivering web content.

Research demonstrates that external factors exert a strong influence on core TAM constructs and are often as important if not more important sources of explained variance on both behavioral intentions towards and actual use of technology. In a series of studies exploring technology acceptance among students and general population (Doleck et al. 2017a, b; Lemay et al. 2017), factors expressing the modality of necessity were shown to strongly influence attitudes, behavioral intentions, and use of social networking, imaging sharing platforms, and online and computer-based education. In these contexts, the perceived

necessity of the technology contributed large amounts of variance explained over the contribution of the conditional affordances of perceived usefulness and perceived ease of use. Thus, considering the modality of the underlying beliefs informing technology acceptance helps researchers situate technology within the frame of social activity. By helping to better conceptualize the range of constraints and affordances of technology, the language of modality helps understand the situational determinants of technology acceptance and use.

References

- Bagozzi R (2007) The legacy of the technology acceptance model and a proposal for a paradigm shift. *J Assoc Inf Syst* 8(4):244–254. <https://doi.org/10.17705/1jais.00122>
- Davis FD (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Q* 13(3):319–340
- Doleck T, Bazalais P, Lemay DJ (2017a) Examining the antecedents of social networking sites use among CEGEP students. *Educ Inf Technol* 22(5):2103–2123. <https://doi.org/10.1007/s10639-016-9535-4>
- Doleck T, Bazalais P, Lemay DJ (2017b) Examining CEGEP students' acceptance of computer-based learning environments: a test of two models. *Educ Inf Technol* 22(5):2523–2543. <https://doi.org/10.1007/s10639-016-9559-9>
- Gee JP, Green JL (1998) Discourse analysis, learning, and social practice: a methodological study. *Rev Res Educ* 23(1):119–169. <https://doi.org/10.3102/0091732X023001119>
- Greeno JG (2011) A situative perspective on cognition and learning in interaction. In: Koschmann T (ed) *Theories of learning and studies of instructional practice*. Springer, New York, pp 41–71. https://doi.org/10.1007/978-1-4419-7582-9_3
- King WR, He J (2006) A meta-analysis of the technology acceptance model. *Inf Manag* 43(6):740–755. <https://doi.org/10.1016/j.im.2006.05.003>
- Lemay DJ, Doleck T, Bazalais P (2017) “Passion and concern for privacy” as factors affecting snapchat acceptance and use. *Comput Hum Behav* 75:264–271. <https://doi.org/10.1016/j.chb.2017.05.022>
- Sun H, Zhang P (2006) The role of moderating factors in user technology acceptance. *Int J Hum Comput Stud* 64(2):53–78. <https://doi.org/10.1016/j.ijhcs.2005.04.013>
- Venkatash V, Morris MG, Davis GB, Davis FD (2003) User acceptance of information technology: toward a unified view. *MIS Q* 27(3):425–478. <https://doi.org/10.2307/30036540>