TESTING ATTITUDE AND BEHAVIORAL INTENTION TOWARD ONLINE SOCIAL SUPPORT:
A VICARIOUS INTERACTIONS PERSPECTIVE

By

Yidi Zhang

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Communication – Master of Arts

2023

ABSTRACT

The notion of vicarious interaction refers to online active users serving as surrogates for passive users to experience online interaction without being involved in the interaction. In the current study, we proposed an experiment to explore how vicarious interactions in online support communities influence observers' attitudes toward online social support and result in their behavioral intentions to support others. Based on previous research, we not only focus on self-identification between the observer and online support provider. In addition, we shed light on the valence of feedback to the support provider to see how vicarious reinforcement affects passive users' attitudes toward providing online support. A 2 (similarity: similar vs. dissimilar) by 2 (valence of feedback: positive vs. negative) experiment is conducted to test the hypotheses. The result suggested that observers' attitudes can lead to a more positive behavioral intentions toward social support only when they see the support providers, whom they can identify with, receive positive feedback from the support seeker. However, the objectively similar or dissimilar between the support provider and observer did not influence people's attitude or behavioral intention toward providing online social support. The findings contribute to the line of studies in vicarious interactions and reinforcement theory.

ACKNOWLEDGEMENTS

I would like to express my greatest gratitude to my advisor Dr. Brandon Van Der Heide, who supported me through the past two years from every aspect. He is not only a great mentor for giving me step-by-step advice on completing my work but also a person I can go to and have a chat with whenever I need help during my stressful time. Learning with Brandon is always fun and valuable. I also want to thank my wonderful committee members, Dr. Sandi Smith and Dr. David Ewoldsen, who gave me great suggestions and helped me shape my thesis to the current version. I met both of them during my first semester starting my master's, and they influenced me a lot during my entire master's career. I also want to thank my fellow students at the Department of Communication for spending time having many hotpots with me during those winter days in East Lansing. I want to say special thanks to my parents, who always support my life decisions and always stand by me. Finally, I want to thank Dr. Nancy Dai, the person who persuaded me to pursue a master's degree at the Department of Communication at MSU in 2020. Now it has been proved that this is a fantastic decision.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Online communities have become a major place for people with similar issues to seek and provide support (Maloney-Krichmar & Preece, 2005). Unlike traditional face-to-face social support conducted in an interpersonal process, online communities provide people with a mass personal environment where all interpersonal supporting conversations can be accessed publicly by online viewers (Li & Feng, 2015; O'Sullivan & Carr, 2018). In this context, each supportive message could possibly receive comments from support seekers and other bystanders in the community. Users in online communities could also gain information and observe all interactions without posting any content online. As suggested by social learning theory, people can learn behaviors from observations (Bandura, 1971). Social media users could not only learn from the information they read. Observing online interactions also may influence viewers' subsequent behaviors. A previous study in social identification pointed out that passive users could benefit from the vicarious online interactions in online support communities by reading the conversations (Dai & Shi, 2022). However, to the author's knowledge, fewer studies have focused on how self-identification with the online support provider and interactions in online support communities could influence bystander users' attitude toward supporting others online and their subsequent behavioral intentions.

The current study aims to explore the relationship between vicarious interactions online and users' subsequent behaviors. Specifically, this study seeks to answer how self-identification would influence people's attitude toward providing social support and whether observing users' supportive interactions online from different sources will influence bystanders' intention to provide support to others. The current project contributes to the broader question of what factors lead people to provide support online.

The paper is organized as follows. First, this work describes Bandura's social learning theory (SLT; 1971), by providing critiques of its "black box" between learning and action. To solve the problem, the mechanism by Dai and Walther (2018) about vicarious social identification is introduced and applied to this study. This section will review relevant studies about online communities and vicarious interactions in a mediated context. Then, the relationship between observing interactions online, attitude toward providing social support online, and future posting intention will be discussed. Finally, the experimental design and results of the study will be presented.

LITERATURE REVIEW

Online Support Communities and Lurkers

An online community is a group of people with similar interests who interact in a virtual space (Preece, 2000). Even though different online communities are differentiated by the purpose of the community and its natural software environment (Preece et al., 2003), the common characteristic of online communities is the importance of the reciprocity of information, support, and services among members (Whittaker et al., 1997). However, "silent groups", also known as lurkers, representing users who occasionally post but regularly read posts online, make up most members in online communities (Sun et al., 2014). The 90-9-1 principle explains the participatory patterns in online communities. The rule states that 90% of members in the community only play the observation role and do not participate in the interaction process, 9% of users only provide a limited contribution, and 1% of creators contribute the majority of content (van Mierlo, 2014). A previous study suggested that there are four main reasons for users lurking online: environmental influence, personal preference, individual-group relationships, and security considerations (Sun et al., 2014). Specifically, environmental influence could affect users' willingness to participate, which includes poor quality of the content, lack of interactions among members, and low contribution payback. For the other three reasons, authors mainly explain them by virtue of individuals' self-willingness and awareness, which are not related to the current study. Thus, the environment and interactions viewed by users could be one of the reasons that cause people's subsequent online behaviors.

Among all categories of online communities, online support communities have a unique contribution to vicarious interactions in research from both theoretical and empirical aspects (Dai & Shi, 2022). First, research has found that users who participate more in online support

communities usually have better psychological health than those who participate in the community less, yet lurkers are still prevalent in online support communities (Mo & Coulson, 2013). Second, reading others' interactions could benefit lurkers in seeking information and satisfy their need to get involved in the online support community (van Uden-Kraan et al., 2008). Hence, online support communities provide researchers with an interesting place to study vicarious interactions and how the environment may influence users' motivation to be active users and provide social support for others online.

Even though most users belong to the silent group, it is still common to see people in online support communities provide informational and emotional comments to support the original posters, as well as some feedback below the supporting comments (Rains et al., 2015). All conversations and interactions among users in online support communities are searchable and visible for every user at any time on the online site (Marwick & boyd, 2011) so users may be affected through the vicarious interactions they observe without becoming personally involved in interaction with others online.

Social Learning Theory

Social learning theory (SLT; Bandura, 1971) focuses on environmental and cognitive factors' influence on human learning and subsequent behaviors. The theory emphasizes that people learn about the world by observing others' behavior without experiencing it by themselves. Through the observation process, people can learn the mechanism of rewards and punishments. Bandura (1971) also pointed out that the effectiveness of people learning this mechanism from similar individuals through vicarious interactions is better than experiencing it. It is suggested that observers can learn faster than performers because the latter need to pay attention to the required response instead of pure learning process (Bandura, 1978b).

SLT suggests that modeling influences primarily serve as informatics (Bandura, 1969) and observers primarily learn symbolic representations of modeled activities rather than precise stimulus-response relationships (Bandura, 1971). For example, if people watch dangerous driving behaviors on TV, even though they do not intend to learn from what they have seen, they probably learn and apply the behavior in their daily lives. As a bridge linking behavioral studies and cognitive approach, SLT sheds light on the involvement of cognitive factors in human's observational learning process. Bandura (1978a) suggested that humans could actively process information and make assumptions between their behaviors and their results. Thus, humans do not simply mimic the behavior they view from the real world. Instead, there is a mediational process between the observation and the final decision of imitating the behavior or not. The mediational process can be separated into four subprocesses (Bandura, 1971): attentional processes, retention processes, motor reproduction processes, and reinforcement and motivational processes. First, attentional processes indicate whether learners need to actually see the behavior that they or others want them to reproduce. Second, retention processes refer to the cognitive processes in that learners mentally rehearse the behavior they intend to reperform. Third, motor reproduction processes include the procedure of converting the information from previous processes, attentional and retention processes, to action. Finally, reinforcement and motivational processes refer to the motivation for learners to enact or mimic the behavior they observed.

The role of reinforcement in SLT is controversial (Bandura, 1971). In early studies of reinforcement-oriented theories, scholars pointed out that reinforcement is required to learn imitative responses (Miller & Dollard, 1944; Gewirtz & Stingle, 1968). In SLT, one of the factors that can affect what is seen and what is not seen is the expectation of reinforcement.

Suppose the observer knows that the behavior in a given model could effectively lead to valued rewards or avoid a negative outcome. In that case, observational learning can be enhanced and increase attractiveness toward the observer and their learning behavior, affecting observers' behavior (Bandura, 1971).

Although SLT provides a framework of how people learn from their observation which may lead to a change in behavior, the mechanism behind the learning process and how it influences the behavioral intention is still a blur. Nelson (2009) suggested that even though SLT have been tested and supported heavily in empirical studies, it is criticized primarily for assuming passivity in the observer who receives rewards or punishments, failing to explain why specific behaviors are rewarded or punished, and failing to explain why some people will not adhere to social norms.

Besides SLT, social cognitive theory (SCT; Bandura, 1978a) also studied how people are affected by environmental and cognitive factors, which in turn, reinforce people's learning and subsequent behavioral change. Different from SLT, SCT emphasizes the role of mental processes in shaping human behavior and how that learning process occurs within a social context. Besides, SCT generally treats the motivation of a specific behavior as a cognitive process, while SLT views the motivation as a reinforcement or punishment. However, neither SLT nor SCT indicated clear factors of people that mimic others' behaviors through their observations since both theories focused on the effects of previous experiences on people's potential behavioral changes. However, empirical evidence from Nabi and Clark (2008) figured out that observing others could not only influence people's behavioral intentions on similar experiences they had but also could influence their expectations of novel behaviors regardless of the positive or negative outcome of the observed behaviors. Even though previous studies on the processes of

social learning can provide researchers insights into how the environment or expectations can affect people's subsequent interactions with others, the detailed reasons that cause people to initiate parasocial intimacy and change their attitude towards a behavior are still blurred. Hence, a new framework is introduced to adapt the current study.

Vicarious Interactions

As suggested by SLT, many studies support the idea that observing indirect interactions influences viewers' attitudes and further behaviors. Studies on cross-group relationships found that reading stories and viewing interactions in the ingroup could help observers reduce prejudice toward the outgroup (Wright et al., 1997; Dovidio et al., 2011). Other scholars found that vicarious interactions in the inter-group improved viewers' attitudes toward outgroup interactions. In turn, it also increased viewers' willingness to engage in cross-group contact (Mazziotta et al., 2011). Furthermore, in the organizational context, employees' observation of others' interactions helped them learn about the organization (Miller & Jablin, 1991) and improve their own interactions with others (Myers, 2018). Both studies demonstrated that organizational behaviors might be learned or reinforced by observing others' behavior without needing to engage in direct communication with other group members or co-workers. In more recent studies, scholars have found that the public audience does not need to interact with an organization directly but can gain a similar experience while viewing interactions online, which indirectly influences the relationship between the viewer and the organization (Lee & Seltzer, 2018). However, none of these studies attempted to discover the mechanism of how people transfer their observation to behavioral intention. In other words, even though these studies could explain the phenomena of SLT, they did not break down the attitude change process or figure out possible mediators.

Back to the early study of parasocial relationships, Horton and Wohl (1956) proposed that viewers may develop a parasocial relationship with television anchors even though they did not have any direct interactions. The research suggested that the audience can identify with and empathically engage with the people with whom the performer interacts as they watch these interactions. In turn, audiences may have the same experience through this vicarious interaction as they experience a true social interaction. Some recent studies suggested that online users can relate to public figures (Dai & Walther, 2018) or a random support provider in health communities (Dai & Shi, 2022) vicariously by observing and identifying with the people who engage with them online.

In Dai and Walther's study (2018), they figured out the role of social identification in vicarious interaction by understanding when and how social identification takes place. As suggested by Walther (2019), an observer may interact virtually with the target person through a surrogate who is seen interacting with the target person. The study also emphasized that social identification can explain the mechanism of why a participant in an observed interaction could qualify as a surrogate for an observer. To figure out the process of social identification works in mediated context, the work by Dai and Walther (2018) borrowed the idea of self-categorization theory which proposed that people see themselves and others as either distinct individuals or as members of various social groups (Turner et al., 1987). To clarify, people classify themselves according to how similar they are on average to ingroup members compared to outgroup members on a salient group characteristic (Hogg & Reid, 2006).

The current study aims to figure out whether observers' attitude toward providing online support will be influenced viewing interactions within an online community. Continuing with the framework provided by Dai and Walther (2018), this study also builds on the term social

identification and parasocial intimacy, but it is different in that it aims to see how this vicarious interaction could affect observers' attitude toward providing support to others online, which in turns influence their behavioral intention. According to Dai and Walther's work (2018), people are more likely to build up parasocial intimacy with ingroup members. In other words, observers could learn more from the interaction between people they are similar with. In this study, the parasocial intimacy between the observer and the support provider would influence observers' attitude toward supporting others online. Hence, the similarity between the observer and the online support provider could be the key factor that influence the parasocial intimacy between them.

Similarity

To break down the term similarity, in Dai and Walther's study (2018), they differentiated whether the users involved in the interaction with a public figure were laypersons or other public figures by identifying whether they are ingroup or outgroup members. As for Dai and Shi's work (2022), they tried to figure out whether observers could identify themselves with the people involved in the interaction as the same gender or not. Both studies found participants identify more with the same gender online character, which showed that demographic similarity could influence people's attitude and future behavior in the online environment. However, similarity is not only defined as the basic demographic similar such as race, gender, and sex.

Tracing back to the definition of similarity, which included in the homophily theory, is how closely two people who interact are similar to one another in terms of characteristics like beliefs, values, education, social status, etc. (Rogers & Bhowmik, 1970; McPherson et al., 2001). The term of similarity is often used in persuasion and trustworthiness literatures. For example, in persuasion, the statement of similarity between receivers and persuaders will enhance the

persuaders' effectiveness is a common assumption (O'Keefe, 2015). Different from actual similarity, which is objective, the perceived similarity is lending the modeling concept. The idea of modeling others comes from social cognitive theory, which proposes that people would imitate the actions of those with whom they identify (Bandura, 2008). More specifically, actual similarity is the degree to which an individual is actually similar to the other, and perceived similarity is the degree to which a person believes that one is similar to another (Montoya et al., 2008). The term perceived similarity first appeared in the media effect and explained how the children perceived themselves as similar to the characters on television (Reeves & Miller, 1978). In interpersonal communication, perceived similarity refers to an individual's belief that an exemplar could reflect their own experiences realistically (Austin & Meili, 1994).

In online environment, without nonverbal information (Walther & Parks, 2002), people rely on online cues to evaluate their similarity between the online users and themselves. In previous studies, researchers already found that observers find themselves similar with online users through cues on restaurant or hotel review website may influence participants' trustworthiness and future behavior (Chan et al., 2017; Shin et al., 2017). Hence, the current study hypothesize that observers could set up self-identification with support provider if their academic institution is same as the one provided in support provider's online profile.

H1: Observers identify more strongly with support providers who they perceive are similar to them.

Feedback

Feedback in the online environment is a symbol of reward from other users. In previous studies, researchers found that people's expectation of feedback is a key motivational factor influencing people's effort in contributing to online resources such as Wikipedia and social

media posting (Grinberg et al., 2017). It is suggested that the more grateful the feedback is to the support provider, the more likely the provider will be motivated to give feedback in the future (Wood et al., 2008). Li & Feng (2015) found that public opinion under a supporting message may influence bystanders' subsequent support behavior. Nevertheless, social media platform feedback, such as like and validation comments, substantially contributes to people's satisfaction of use (Bazarova et al., 2015) and can be seen as an expression of feelings and emotions, which are key to mediated communication (Spottswood et al., 2013). Therefore, rewards or punishments from online bystanders could influence people's attitudes toward providing support to others. In addition, as people engage in behavior that determines behavioral intention, their attitudes are shaped by both perceived risks and benefits (Ajzen, 1985). Hence, we could infer that the reinforcement from others' feedback could influence observers' attitudes which, in turn, affect observers' behavioral intention.

Within the online communities context, people's intention on subsequent supporting behavior may be influenced by their observation of others' interaction (Li & Feng, 2015), which means that existing support seekers and providers could both influence bystanders' intention to provide support to others. As for the perceived similarity, observers identify themselves with the support provider by the online cues, including user avatar, gender, and age reported by the user. Hence, receiving positive feedback in the current context is known as a reward, and negative feedback is known as a punishment. The author makes the assumption that users will have a higher intention to have more positive attitude toward providing social support online if they identify themselves similar with the support provider with positive feedback. On the other hand, negative feedback could have opposite outcome (Fong et al., 2019), which may lead people be less motivated. The hypotheses are generated as follow:

H2: There is an interaction between similarity and the valence of support feedback received such that, observers have (a) a more positive attitude toward providing support to others online when they see similar support providers receive positive feedback than when dissimilar providers received positive feedback and (b) a more negative attitude toward providing support to others online when they see similar support providers receive negative feedback than when dissimilar providers received negative feedback.

Attitude and Behavioral Intention

The relationship between attitude and behavioral intention has been proven by various theories in the past decades. A number of studies have confirmed that there is a consistent relationship between attitude and behavioral intention (Glasman & Albarracín, 2006; Bagozzi & Burnkrant, 1979; Guagnano et al., 1995). Suggested by the theory of reasoned action (Ajzen & Fishbein, 1980) and confirmed by many empirical studies, there is a high correlation between attitude and behavioral intention (Sheppard et al., 1998; Albarracín et al., 2001). Similarly, in the theory of planned behavior (Ajzen, 1991), empirical studies have also found that behavioral intentions are based on people's attitude (see review by Topa & Moriano, 2010). It has been assumed that attitudes play a significant role in determining behavior and, consequently, that one way to affect someone's behavioral intention is to change that person's attitude. Therefore, the following hypothesis is posted to confirm the relationship between attitude and intention in the current supporting context:

H3: Observers' attitude toward online social support and behavioral intention in supporting others online is positively correlated.

As argued in Hypothesis 1, the current study expects that online observers could identify themselves as similar or dissimilar to the online support provider via the location cue included in

the online community. If this is true, it could be the case that observers identify themselves with online support providers who are from the same university as posted online, which could lead to Hypothesis 2. Specifically, if they find themselves similar to the support provider, their attitude toward social support will likely be influenced depending on the valence of feedback the support provider received in the community. Observers may have a more positive attitude toward social support when seeing positive feedback for a support provider similar to them, but have a negative attitude when a dissimilar support provider received negative feedback. Following Hypothesis 3, the study aims to test whether attitude toward social support could affect behavioral intention in the online community setting (conceptual model see Figure 1). Thus, the following hypothesis is proposed:

H4: The interaction of similarity and the valence of feedback affects behavioral intention through the attitude toward providing social support.

METHOD

Design

In the current study, a between-subject experimental design of 2 (similarity: similar vs. dissimilar) × 2 (valence of feedback: positive vs. negative) is proposed. Before displaying stimuli to participants, instructions informed them that they will be viewing a college discussion community and will need to answer some questions before viewing others' interactions. These questions included their current attitudes towards posting supportive messages online in online communities. Then, participants were randomly assigned to one scenario in which the stimuli will include an interaction between a poster and a support provider. After viewing each stimulus, participants were asked to report their attitude towards providing online support and their intention to provide supportive comments in the future.

Participants

Ninety students (56.7% female; M_{age} = 21.10, SD = 2.08) were recruited from a research participant pool at a large Midwestern university in the United States. Students who participated in the study earned extra credit from the communication course they were enrolled in. 71.1% of participants indicated themselves as white or Caucasian, 11.1% as Asian or Pacific Islander, 8.9% as black or African American, 3.3% as Hispanic or Latino, 3.3% as Native American or American Indian, and 2.2% as multiple races. Among all participants, 5.6% are international students.

Stimuli

Each stimulus material contains an interaction between the poster and the support provider. All stimuli include an original post mentioning the issue the original poster faces, a reply from a user (support provider) to provide some support for the issue, and a response to the

supporting message from the original poster. The support provider's personal information and the valence of the feedback from the poster will be manipulated.

Similarity (similar vs. dissimilar) is manipulated with online cues under the avatar of the support provider, including the user's school logo and name of the institution. In the similar condition, the school name will be the same as the participant's, and as well as the university logo (see Figure 2 and Figure 3). In the dissimilar condition, neither the university name nor the institution logo is the same (See Figure 4 and Figure 5).

The valence of feedback (positive vs. negative) will be manipulated by the content of the feedback. Under the positive condition, the content will include appreciation words like "Thank you for your suggestions…" and positive results according to the support given in the supporting comment (see Figure 2 and Figure 4). As for the negative condition, no appreciation is included. Instead, a negative expression like "Unfortunately, this doesn't…" is expressed through the feedback. Besides, there will be no positive results contained in the negative feedback (see Figure 3 and Figure 5).

Measurements

Identification is adapted from Cameron's (2004) scale of social identification which is also used in Dai & Walther (2018), they reported the coefficient alpha of .78. The scale could define participants' perception of receiving the vicarious interaction. Four questions are included using a 7-point Likert scale: "I have a lot in common with the person", "I feel strong ties to the person", "I find it difficult to form a bond with the person", and "I don't feel a sense of being 'connected' with the person".

Attitude toward providing social support is measured through a 6-item semantic different scale (Burgoon et al., 1978; Shin et al., 2017). Participants are asked to indicate their attitude

toward providing social support to others in similar online communities through the following items: unacceptable (1) – acceptable (7), unfavorable – favorable, wrong – right, foolish – wise, bad – good, negative – positive. The coefficient alpha reported from Shin and colleagues' (2017) study is .96.

Behavioral intention is a measurement that we have created for the purpose of the current study. Participants will be asked to indicate their future intention on providing support to others in online support communities through the following statements: "In the future I would participate in an academic support community like this one", "In the future I would participate in an online community with similar topic", "In the future I intend to provide online academic support", and "I will not be willing to provide online academic support in the future". All questions are measured with a 7-point Likert scale.

RESULTS

Manipulation Checks

A manipulation check assessed the valence of feedback to ensure that the manipulation was successful. All participants are asked to indicate their degree of agreement on a 7-point Likert (1 = strongly agree, 7 = strongly disagree) scale through the following statement: "The feedback from Chris is positive", "The feedback from Chris is favorable", "Chris approved the supporting message", "Chris agreed with the supporting message", "Chris liked the supporting message". The result of an ANOVA indicated that participants randomly assigned into the positive valence condition reported the valence of the feedback they observed to be more positive (M = 3.07, SD = 1.94, F = 6.41, p = .01) than participants randomly assigned to the negative valence condition[1] (M = 4.12, SD = 2.03, F = 6.74, p = .01). Based on these results, the induction of valence was judged to be adequate.

To assess the efficacy of the similarity induction we proceed in a multiple step process. First, we evaluated the induction of objective similarity. To assess this we recorded observations each participant's assigned similarity condition. Recall that all participants were students enrolled at the same large public university in the Midwestern United States. Participants who were assigned to the similar support provider condition (n = 43) each observed a support provider from the *same* educational institution as the participant was attending. Participants in the dissimilar support provider condition (n = 47) each observed a support provider who attended a *rival* academic institution. These observations indicated that the induction of objective

[1] Since the mean of negative valence condition is close to the mid-point, we conducted another one-sample t-test to test the difference between the valence of negative and neutral, $t(89) = -1.88$, p = .06. The result indicate that the current stimuli is closer to neutral valence.

similarity was valid in the current study. However, this work also concerns itself with subjective or perceptual similarity. To assess this perceptual similarity, the induction of similarity was checked in H1 for its effect on identification.

Analyses of Main Hypotheses

H1 predicted that observers identify more with support providers who are similar to them in an online support community. An independent t-test was applied to evaluate the proposed hypothesis. The statistical findings indicated that there was no significant distinction in participants' self-identification with the online support providers between the two groups, whether they were similar to the participant (n = 43, M = 4.23, SD = .78) or dissimilar from the participant (n = 47, M = 4.07, SD = .92). Therefore, the data were not consistent with H1, $t(88) = .96$, $p = .34$ (result also see Table 1). Morever, this finding illustrates that although the induction of objective similarity was valid in the current study, this particular induction did not have strong effects on perceptive identification as expected.

H2 hypothesized that there is an interaction effect between observers' similarity to the online support provider and the valence of feedback to the support message, which influences online passive users' attitudes toward providing social support to others in online support communities in the future. This hypothesis was tested by a two-way ANOVA. The result showed that there were neither main effects nor interaction effects as hypothesized. That is, there is no significant difference in the similarity ($F[1, 86] = .66$, $p = .42$) or valence of feedback ($F[1, 86] = .83$, $p = .37$) on influencing observers' attitudes toward supporting others. The interaction effect is also not statistically significant ($F[1,86]= .16$, $p = .69$). Hence, the result was not consistent with H2 (see Table 2).

H3 posited attitudes toward providing social support positively correlate with behavioral

intentions in providing support to others, such that more favorable attitudes toward providing social support are associated with more favorable intentions of providing social support in the future. A correlation tested the initial hypothesis. The analysis found a strong positive correlation between attitudes toward providing support and behavioral intentions in providing social support ($r[88] = .42$, $p < .001$). The data were consistent with H3 (see Table 3).

H4 considered the overall conceptual model, including the proposed interaction effect the valence of feedback and similarity of support provider on attitudes toward providing social support online, and the mediation effect of attitude toward providing social support to behavioral intentions to provide support (see Figure 1). The current model applied a conditional process analysis (Hayes, 2013) using the SPSS macro PROCESS to test the direct and indirect effects of the interaction between the valence of feedback and the similarity of observers' attitudes toward providing social support and behavioral intentions. Specifically, the analysis adopted Model 7 (Hayes, 2013), which is included in the PROCESS macro, to test the conceptual model. First, the model of the interaction of similarity and valence of feedback affects attitude toward providing social support online is insignificant ($F[3,86] = .55$, $p = .65$). Then, the model of the mediating effect of attitude toward providing social support on behavioral intention is statistically significant ($F[2,87] = 9.38$, $p < .001$). Lastly, neither the direct effect (95% CI[-.41,.32]) of similarity on behavioral intention nor the mediation indirect effect (95% CI[-.27,.42]) is significant. Because both the direct effect and indirect effect confidence intervals included zero, the data were judged to be inconsistent with H4.

Post Hoc Analyses

Although the perceptive induction of similarity was not successful in this study, there was still adequate variance on subjective similarity to assess its potential impact on dependent

variables of interest (range, minimum value 1; range, maximum value 6; *SD* = .85). Therefore, we reanalyzed these data using a continuous measure of similarity to address study predictions H2 and H4.

H2 predicted an interaction between similarity and the valence of the feedback a provider received on attitudes toward providing future support. To assess this a step-wise multiple regression analysis regressed attitudes for providing support upon a continuous measure of perceived similarity with the feedback provider, a categorical measure of the valence condition to which particpants were assigned, and an interaction term of these two variables in the second step of the analysis. The first step suggested that the overall model adequately predicted variance in attitudes, $\Delta F(2, 87) = 7.28$, $p = .001$, Adjusted R-square = .124. Analysis of the individual factors suggested that similarity did account for significant variance in attitudes toward providing social support, $\beta = .37$, $t(88) = 3.69$, $p < .001$. However, the valence of feedback provided to the support provider was not associated with significant amounts of variance predicted in attitudes toward providing social support, $\beta = -.05$, $t(88) = -.52$, $p = .61$. The second step of the model, which introduced the interaction term, did not explain more variance in attitudes toward providing social support than the initial step of the model, $\Delta F(1, 86) = .06$, $p = .800$, Adjusted R-square = .11 (see Table 4). As the expected interaction effect was not a significant predictor of attitudes toward providing social support, the analysis concludes that the data were inconsistent with H2. However, these data did indicate a significant effect of subjective identification on attitudes toward providing social support.

H4 proposed the comprehensive conceptual framework, which includes the interaction between the valence of feedback and similarity of support providers on attitudes toward providing future support online, and the effect of attitudes toward providing social support serves

as a mediator between similarity and behavioral intentions on providing support. A conditional process analysis is employed by using the SPSS macro PROCESS model 7 (Hayes, 2013) to analyze the direct and indirect effects of observers' similarity toward behavioral intentions on providing future support. As for the direct effect of observers' similarity on behavioral intention on providing social support, the analysis estimates this effect to be small, point estimate = .16 (95% CI[-.06, .40], $t(87) = 1.47$, $p = .14$).

Next, this analysis proceeds to the consideration of the conditional indirect effect of identification with the support provider, moderated by the valence of feedback received, on behavioral intentions to provide support through attitudes toward providing social support. When observers were randomly assigned to the positive feedback valence condition, there was a statistically significant, but small, indirect effect of identification with the support provider on behavioral intention to provide support through attitudes toward providing social support (95% CI[.02, .30]). On the other hand, when participants saw negative feedback for the support provider, identifying with the support provider does not influence participants' behavioral intentions toward providing support through participants' attitudes toward providing social support (95% CI[-.03, .35]). This pattern is consistent with the prediction made in H4, however the size of this effect did not allow the effect to achieve statistical significance, Index of Moderated Mediation = .02, (95% CI[-.19, .22]). Although the moderated mediation pattern observed here is generally consistent with expectations, the effect was too small to support the hypothesized prediction for H4.

DISCUSSION

Review of Results

The current study analyzed online support providers as a surrogate for passive users to experience interactions in online support communities. The results revealed that observing online interactions did not influence observers' attitudes toward providing future support or behavioral intentions on supporting no matter the valence of feedback the support provider received online when observers are objectively similar or dissimilar to the support provider. However, the results change slightly when we shift from considering objective similarity to perceived similarity between participants and online support providers. That is, if observers can identify with the online support provider, their attitudes toward providing future support can be influenced, which leads to a positive effect in behavioral intentions to provide future support, this occurs when the support provider online receives positive, but not negative, feedback. Besides, the data from the experiment supports the statement that observers' attitudes toward providing online support can influence behavioral change in supporting others in the future positively, which successfully replicates the result from previous research on attitude and behavioral change.

Theoretical Considerations

In spite of the challenges this work faced, the current study does provide several theoretical contributions. The study applies the model of vicarious interactions in the computer-mediated context (Dai & Walther, 2018), where online active users serve as surrogates and provide passive users with an indirect experience of online interactions. The current study found that observers identifying with the online support provider did not always influence the attitude toward providing future support, but only viewing interactions with positive feedback influenced attitude toward providing support. This is partly consistent with previous research that people

can see similar people online as surrogates and experience vicarious interactions (Dai & Walther, 2018). However, the current findings also suggest that objective similarity between observers and online support providers did not influence observers' attitudes toward providing future support, which was inconsistent with the previous conclusions that people can set up intimacy with in-/out- group members and experience vicarious interactions suggested by Dai and Walther (2018). However, we would advise great caution in interpreting these results as they do alter the context of Dai and Walther's work significantly (i.e., online social support interactions vs. interactions with celebrities on Twitter), and the current results also employ a weak induction of perceptive similarity, which may have impacted the present findings.

The current study also contributes to the reinforcement theory's application in online vicarious interactions. According to the reinforcement theory, people's behaviors are shaped by the consequences that follow them. Different consequences, positive or negative, can be a reinforcement or punishment, increasing or decreasing the likelihood of people pursuing similar behaviors (Ferster & Skinner, 1957). That is, in the social support context, if the support provider receives positive feedback from the support seeker, the support provider has a higher potential to provide future support to others, and vice versa. In the current study, the result that when observers see that the support provider they can identify with receives positive feedback, their attitudes toward providing future support will be affected, which is partially consistent with the notion of reinforcement. However, seeing negative feedback from a support provider they can identify with did not change observers' attitudes toward providing future support from either positive or negative side, which contradicts the conclusion of the negative reinforcement. We suggest that one of the possible reasons that lead to this change of result is that the original reinforcement theory focuses on the direct interaction between a person and a feedback provider,

but the current study comes from the vicarious interaction perspective. People may learn the behavior from someone they can identify with vicariously, but the reinforcement only worked when the feedback is positive. In other words, people do not care about the punishment to others, and that may not influence their attitude toward providing support in either way.

Discussions on Online Feedback

In addition to replicating the original model of vicarious interactions (Dai & Walther, 2018), this study sheds light on the valence of feedback from the support seeker, which contributes to the vicarious interactions in computer-mediated context. Variables, including gender, cues from online platforms (Dai & Shi, 2022), message features, and mental health symptoms (Shi & Dai, 2023), were tested in previous studies. In the current study, a new boundary condition, the valence of feedback from the online support seeker, is first considered in online communities' research. However, the current study only considered positive and negative feedback in a narrow definition, which is, agree or disagree with the supporting message. The categorization of the feedback can be more detailed and may result in different effects on people's behavioral intentions.

First, negative feedback can also break down into different types, including aggressive feedback and more simple or direct negative feedback. Aggressive comments may cause negative consequences in cyberspace (Chesney et al., 2009), even a negative impact on the entire online community (Xu et al., 2016). This led to the question of how people's subsequent online supporting behavioral intentions are influenced by aggressive feedback or further hate expressions, which remain uninvestigated.

Second, no feedback is a missing category since the current study aims to figure out how people may be influenced by observing a reinforcement toward an online user on either a

positive or negative side. Previous research on customers' online reviews figured out that no response is worse than both positive and negative responses (Esmark Jones et al., 2018), so adding no feedback into the current study may influence the reinforcement effect of different types of feedback. Future research should consider no reply as a new category of online feedback in online supporting communities and investigate the influence of vicarious reinforcement and change in attitude toward supporting others as well.

Third, different types of feedback from in-/out- group members can also see as a form of reciprocal feedback or reciprocity. Previous studies on reciprocity suggested that ingroup members who share same goals are more likely to reciprocate positive actions (Yamagishi & Kiyonari, 2000; Balliet et al., 2014). Adapting this concept in the online supporting communities, people who see online users who are providing help and receiving positive feedback are more likely to have the intention of repaying this behavior back. However, the current study did not consider the function of reciprocity or the application of bounded generalized reciprocity in the online supporting community. Future studies should consider how reciprocity works in the online community as well as the vicarious interactions environment.

Besides the valence of feedback, the source of feedback is also current study only considered feedback from the original poster. However, in the masspersonal environment in online communities, people can comment under others' posting threads or provide any feedback to others in the online public space. Therefore, whether the result of online supporters receiving feedback from different sources may influence observers' attitudes toward supporting others online remain under investigation.

Limitations and Future Research

One limitation was the failure of the similarity induction to affect perceived

identification. As mentioned in the result section, the induction of objective similarity was valid, but the induction of perceptual similarity was unsuccessful. There are several issues in the current induction of similarity. First, in our scenarios, we present participants an online interaction that includes a support provider from the same school that participants are attending or another rival academic institution in the same state. This can be problematic since these two universities are in the same state, and students attending these institutions can be friends. Except during the sports game days that may make students from each institution identify with their own school more, they cannot feel significant differences from someone from the other institution. Besides manipulating similarity by using different universities, age is another indicator that can be considered in future studies. By differentiating support providers' age, participants can identify themselves with someone of similar age instead of someone younger than them. Especially in an online supporting community, participants are more likely to identify themselves and listen to someone's suggestions from a similar age instead of a teenager.

Another related limitation was that, because our induction of similarity did not produce large effects on perceived identification with a feedback provider, the measure of identification did not introduce large amounts of variance which would help in explaining hypothesized outcome variables. Since our sample is using students from a large public university in the Midwestern United States, our induction is designed to be tailored to the participants we are recruiting. Besides, the current sample is small, with a size of 90. This can restrict the range of out result interpretation and apply it to a larger population. Future research should consider replicate the current framework but using different induction and sample to test the boundary condition, valence of feedback, in online vicarious interactions.

REFERENCES

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Springer. https://doi.org/10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.

Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, *127*(1), 142–161. https://doi.org/10.1037/0033-2909.127.1.142

Austin, E. W., & Meili, H. K. (1994). Effects of interpretations of televised alcohol portrayals on children's alcohol beliefs. *Journal of Broadcasting & Electronic Media*, *38*(4), 417–435. https://doi.org/10.1080/08838159409364276

Bagozzi, R. P., & Burnkrant, R. E. (1979). Attitude measurement and behavior change: A reconsideration of attitude organization and its relationship to behavior. *ACR North American Advances*, *NA-06*. https://www.acrwebsite.org/volumes/9573/volumes/v06/NA-06/full

Balliet, D., Wu, J., & De Dreu, C. K. W. (2014). Ingroup favoritism in cooperation: A meta-analysis. *Psychological Bulletin*, *140*(6), 1556–1581. https://doi.org/10.1037/a0037737

Bandura, A. (1969). Social-learning theory of identificatory processes. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Rand McNally College Publishing Company.

Bandura, A. (1971). *Social learning theory* (1st edition). Prentice-Hall.

Bandura, A. (1978a). Self-efficacy: Toward a unifying theory of behavioral change. *Advances in Behaviour Research and Therapy*, *1*(4), 139–161. https://doi.org/10.1016/0146-6402(78)90002-4

Bandura, A. (1978b). Social learning theory of aggression. *Journal of Communication*, *28*(3), 12–29. https://doi.org/10.1111/j.1460-2466.1978.tb01621.x

Bandura, A. (2008). Social cognitive theory of mass communication. In *Media effects* (3rd ed.). Routledge.

Bazarova, N. N., Choi, Y. H., Schwanda Sosik, V., Cosley, D., & Whitlock, J. (2015). Social sharing of emotions on Facebook: Channel differences, satisfaction, and replies. *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*, 154–164. https://doi.org/10.1145/2675133.2675297

Burgoon, M., Miller, M. D., Cohen, M., & Montgomery, C. L. (1978). An empirical test of a model of resistance to persuasion. *Human Communication Research*, *5*(1), 27–39. https://doi.org/10.1111/j.1468-2958.1978.tb00620.x

Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity*, *3*(3), 239–262. https://doi.org/10.1080/13576500444000047

Chan, I. C. C., Lam, L. W., Chow, C. W. C., Fong, L. H. N., & Law, R. (2017). The effect of online reviews on hotel booking intention: The role of reader-reviewer similarity. *International Journal of Hospitality Management*, *66*, 54–65. https://doi.org/10.1016/j.ijhm.2017.06.007

Chesney, T., Coyne, I., Logan, B., & Madden, N. (2009). Griefing in virtual worlds: Causes, casualties and coping strategies. *Information Systems Journal*, *19*(6), 525–548. https://doi.org/10.1111/j.1365-2575.2009.00330.x

Dai, Y., & Shi, J. (2022). Vicarious interactions in online support communities: The roles of visual anonymity and social identification. *Journal of Computer-Mediated Communication*, *27*(3), zmac006. https://doi.org/10.1093/jcmc/zmac006

Dai, Y., & Walther, J. B. (2018). Vicariously experiencing parasocial intimacy with public figures through observations of interactions on social media. *Human Communication Research*, *44*(3), 322–342. https://doi.org/10.1093/hcr/hqy003

Dovidio, J. F., Eller, A., & Hewstone, M. (2011). Improving intergroup relations through direct, extended and other forms of indirect contact. *Group Processes & Intergroup Relations*, *14*(2), 147–160. https://doi.org/10.1177/1368430210390555

Esmark Jones, C. L., Stevens, J. L., Breazeale, M., & Spaid, B. I. (2018). Tell it like it is: The effects of differing responses to negative online reviews. *Psychology & Marketing*, *35*(12), 891–901. https://doi.org/10.1002/mar.21142

Ferster, C. B., & Skinner, B. F. (1957). *Schedules of reinforcement* (pp. vii, 744). Appleton-Century-Crofts.

Fong, C. J., Patall, E. A., Vasquez, A. C., & Stautberg, S. (2019). A meta-analysis of negative feedback on intrinsic motivation. *Educational Psychology Review*, *31*(1), 121–162. https://doi.org/10.1007/s10648-018-9446-6

Gewirtz, J. L., & Stingle, K. G. (1968). Learning of generalized imitation as the basis for identification. *Psychological Review*, *75*, 374–397. https://doi.org/10.1037/h0026378

Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude–behavior relation. *Psychological Bulletin*, *132*(5), 778–822. https://doi.org/10.1037/0033-2909.132.5.778

Grinberg, N., Kalyanaraman, S., Adamic, L. A., & Naaman, M. (2017). Understanding feedback expectations on Facebook. *Proceedings of the 2017 ACM Conference on Computer*

Supported Cooperative Work and Social Computing, 726–739. https://doi.org/10.1145/2998181.2998320

Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitude-behavior relationships: a natural experiment with curbside recycling. *Environment and Behavior*, *27*(5), 699–718. https://doi.org/10.1177/0013916595275005

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis, first edition: A regression-based approach* (First edition). The Guilford Press.

Hogg, M. A., & Reid, S. A. (2006). Social identity, self-categorization, and the communication of group norms. *Communication Theory*, *16*(1), 7–30. https://doi.org/10.1111/j.1468-2885.2006.00003.x

Horton, D., & Wohl, R. R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry*, *19*(3), 215–229. https://doi.org/10.1080/00332747.1956.11023049

Lee, N., & Seltzer, T. (2018). Vicarious interaction: The role of observed online communication in fostering organization-public relationships. *Journal of Communication Management*, *22*(3), 262–279. https://doi.org/10.1108/JCOM-11-2017-0129

Li, S., & Feng, B. (2015). What to say to an online support-seeker? The influence of others' responses and support-seekers' replies. *Human Communication Research*, *41*(3), 303–326. https://doi.org/10.1111/hcre.12055

Maloney-Krichmar, D., & Preece, J. (2005). A multilevel analysis of sociability, usability, and community dynamics in an online health community. *ACM Transactions on Computer-Human Interaction*, *12*(2), 201–232. https://doi.org/10.1145/1067860.1067864

Marwick, A. E., & boyd, d. (2011). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society*, *13*(1), 114–133. https://doi.org/10.1177/1461444810365313

Mazziotta, A., Mummendey, A., & Wright, S. C. (2011). Vicarious intergroup contact effects: Applying social-cognitive theory to intergroup contact research. *Group Processes & Intergroup Relations*, *14*(2), 255–274. https://doi.org/10.1177/1368430210390533

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, *27*(1), 415–444. https://doi.org/10.1146/annurev.soc.27.1.415

Mierlo, T. van. (2014). The 1% rule in four digital health social networks: An observational study. *Journal of Medical Internet Research*, *16*(2), e2966. https://doi.org/10.2196/jmir.2966

Miller, N. E., & Dollard, J. (1944). Social learning and imitation. *Journal of Nervous and Mental Disease*. https://doi.org/10.1097/00005053-194402000-00051

Miller, V. D., & Jablin, F. M. (1991). Information seeking during organizational entry: Influences, tactics, and a model of the process. *The Academy of Management Review*, *16*(1), 92–120. https://doi.org/10.2307/258608

Mo, P. K. H., & Coulson, N. S. (2013). Online support group use and psychological health for individuals living with HIV/AIDS. *Patient Education and Counseling*, *93*(3), 426–432. https://doi.org/10.1016/j.pec.2013.04.004

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships*, *25*(6), 889–922. https://doi.org/10.1177/0265407508096700

Myers, C. G. (2018). Coactive vicarious learning: Toward a relational theory of vicarious learning in organizations. *Academy of Management Review*, *43*(4), 610–634. https://doi.org/10.5465/amr.2016.0202

Nabi, R. L., & Clark, S. (2008). Exploring the limits of social cognitive theory: Why negatively reinforced behaviors on TV may be modeled anyway. *Journal of Communication*, *58*(3), 407–427. https://doi.org/10.1111/j.1460-2466.2008.00392.x

Nelson, A. (2009). *Gender in Canada, fourth edition* (4th edition). Pearson Education Canada.

O'Keefe, D. J. (2015). *Persuasion: Theory and research* (3rd ed.). SAGE Publications, Inc. https://us.sagepub.com/en-us/nam/persuasion/book234184

O'Sullivan, P. B., & Carr, C. T. (2018). Masspersonal communication: A model bridging the mass-interpersonal divide. *New Media & Society*, *20*(3), 1161–1180. https://doi.org/10.1177/1461444816686104

Preece, J. (2000). *Online communities: Designing usability and supporting sociability* (1st edition). Wiley.

Preece, J., Maloney-Krichmar, D., & Abras, C. (2003). History of online communities. In K. Christensen & D. Levinson (Eds.), *Encyclopedia of community: From village to virtual world*. Thousand Oaks: Sage Publications.

Rains, S. A., Peterson, E. B., & Wright, K. B. (2015). Communicating social support in computer-mediated contexts: A meta-analytic review of content analyses examining support messages shared online among individuals coping with illness. *Communication Monographs*, *82*(4), 403–430. https://doi.org/10.1080/03637751.2015.1019530

Reeves, B., & Miller, M. M. (1978). A multidimensional measure of children's identification with television characters. *Journal of Broadcasting*, *22*(1), 71–86. https://doi.org/10.1080/08838157809363867

Rogers, E. M., & Bhowmik, D. K. (1970). Homophily-heterophily: Relational concepts for communication research. *Public Opinion Quarterly*, *34*(4), 523–538. https://doi.org/10.1086/267838

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, *15*(3), 325–343. https://doi.org/10.1086/209170

Shi, J., & Dai, Y. (2023). Audience–campaign planner interaction in social media communication campaigns: How it influences intended campaign responses in the observing audience. *Human Communication Research*, hqad003. https://doi.org/10.1093/hcr/hqad003

Shin, S. Y., Van Der Heide, B., Beyea, D., Dai, Y., & Prchal, B. (2017). Investigating moderating roles of goals, reviewer similarity, and self-disclosure on the effect of argument quality of online consumer reviews on attitude formation. *Computers in Human Behavior*, *76*, 218–226. https://doi.org/10.1016/j.chb.2017.07.024

Spottswood, E. L., Walther, J. B., Holmstrom, A. J., & Ellison, N. B. (2013). Person-centered emotional support and gender attributions in computer-mediated communication. *Human Communication Research*, *39*(3), 295–316. https://doi.org/10.1111/hcre.12006

Sun, N., Rau, P. P.-L., & Ma, L. (2014). Understanding lurkers in online communities: A literature review. *Computers in Human Behavior*, *38*, 110–117. https://doi.org/10.1016/j.chb.2014.05.022

Topa & Moriano Leon. (2010). Theory of planned behavior and smoking: Meta-analysis and SEM model. *Substance Abuse and Rehabilitation*, 23. https://doi.org/10.2147/SAR.S15168

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory* (pp. x, 239). Basil Blackwell.

van Uden-Kraan, C., Drossaert, C., Taal, E., Seydel, E., & Laar, M. van de. (2008). Self-reported differences in empowerment between lurkers and posters in online patient support groups. *Journal of Medical Internet Research*, *10*(2), e992. https://doi.org/10.2196/jmir.992

Walther, J. B. (2019). Interpersonal versus personal uncertainty and communication in traditional and mediated encounters: A theoretical reformulation. In S. R. Wilson & S. W. Smith, *Reflections on interpersonal communication research*. Cognella Academic Publishing.

Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In G. R. Miller (Ed.), *The handbook of interpersonal communication* (pp. 529–563). Thousand Oaks, Sage.

Whittaker, S., Isaacs, E., & O'Day, V. (1997). Widening the net: Workshop report on the theory and practice of physical and network communities. *ACM SIGCHI Bulletin*, *29*(3), 27–30. https://doi.org/10.1145/264853.264867

Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in the development of social support, stress, and depression: Two longitudinal studies.

Journal of Research in Personality, *42*(4), 854–871. https://doi.org/10.1016/j.jrp.2007.11.003

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, *73*, 73–90. https://doi.org/10.1037/0022-3514.73.1.73

Xu, B., Xu, Z., & Li, D. (2016). Internet aggression in online communities: A contemporary deterrence perspective. *Information Systems Journal*, *26*(6), 641–667. https://doi.org/10.1111/isj.12077

Yamagishi, T., & Kiyonari, T. (2000). The group as the container of generalized reciprocity. *Social Psychology Quarterly*, 116–132.

APPENDIX A: TABLES

Table 1: Manipulation check for identification

Identify	Similar		Dissimilar		*t(88)*	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Identification	4.24	.78	4.07	.92	.96	.34	.85

Table 2: Interaction effect between similarity and the valence of support message

	min	max	*M*	*SD*	*df*	*MS*	*F*	*p*	η^2
Similarity	0	1	.52	.50	1	.85	.66	.42	.01
Valence of feedback	0	1	.50	.50	1	1.07	.83	.37	.01
Similarity * Valence of feedback	0	1			1	.21	.16	.69	.00

Table 3: Correlations

Variables	n	min	max	M	SD	1	2	3	4
1. Attitude toward providing social support	90	1	7	6.05	1.13	-			
2. Behavioral intention	90	1	7	4.46	.94	.42***	-		
3. identification with support provider	90	1	7	4.15	.85	.38***	.29**	-	
4. valence of feedback (perceived)	90	1	7	3.60	2.04	.10	.51	.16	-

***$p < .001$, **$p < .01$

Table 4: Step-wise Multiple Regression

	Step 1			Step 2
	Overall	Similarity	Valence of feedback	Similarity * Valence of feedback
M		.52	.50	
SD		.50	.50	
ΔF	7.28***			.06
R^2 (adj)	.124			.11
β		.37	-.05	
t		.369***	-.52	

**p = .001 ***p < .001

APPENDIX B: FIGURES

Figure 1: Conceptual Model of Hypothesis 4

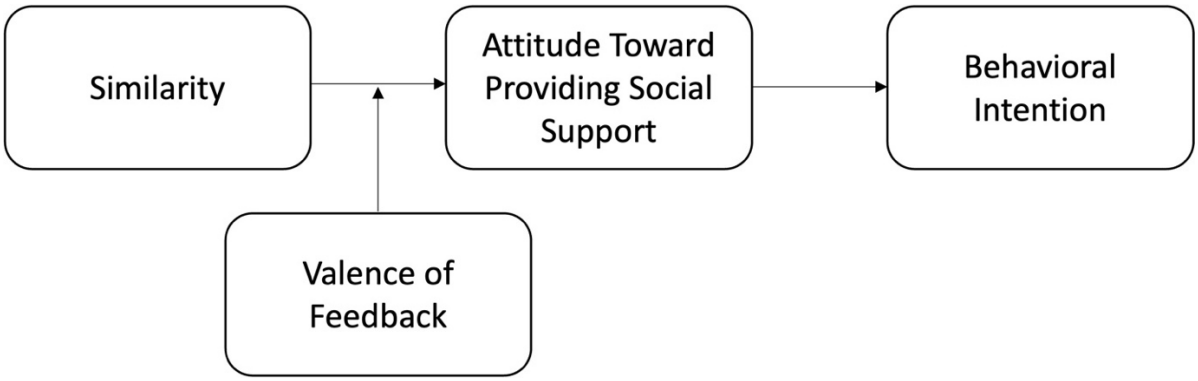


Figure 2: Similar support provider with positive feedback

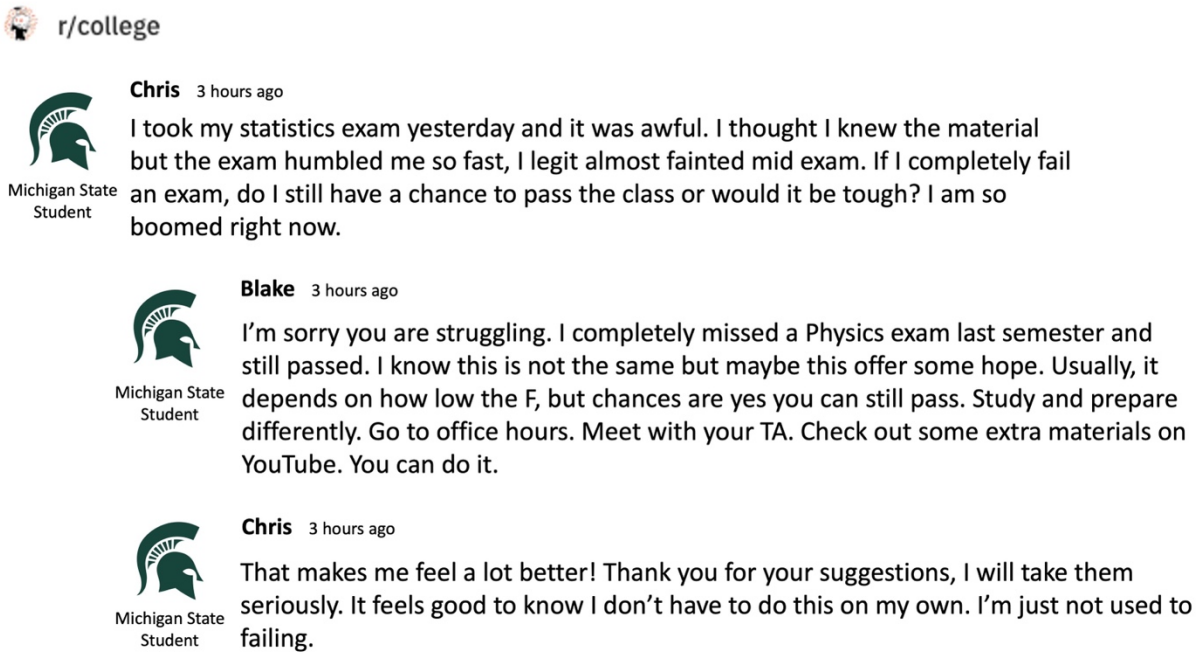


Figure 3: Similar support provider with negative feedback

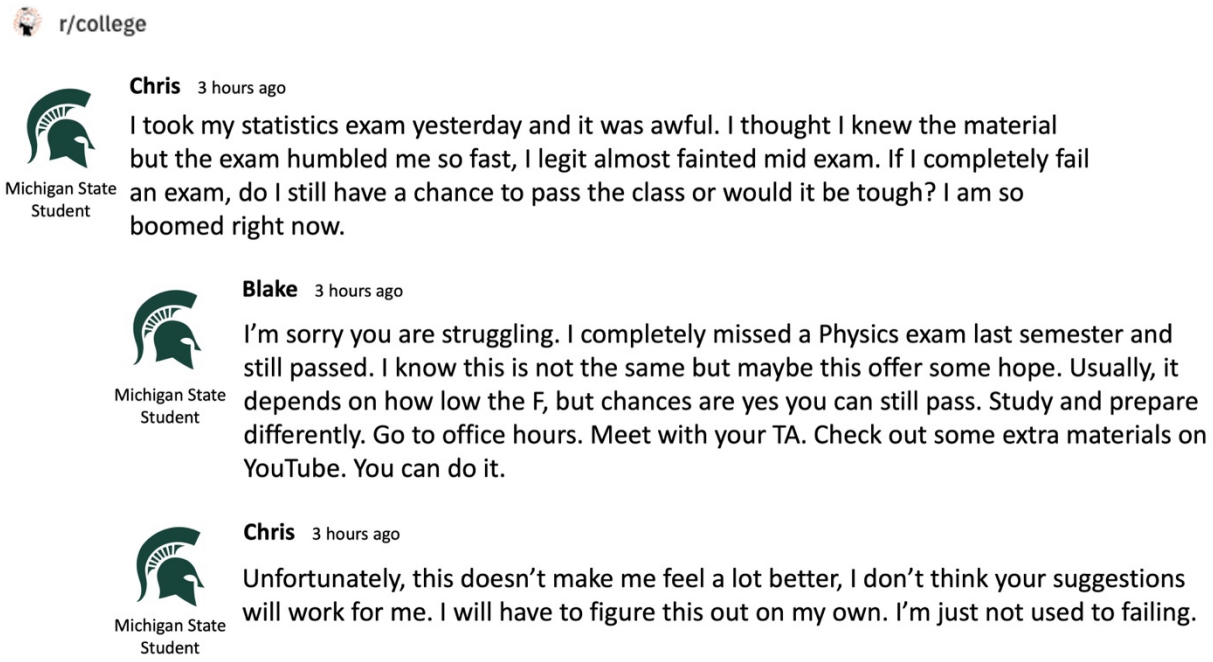


Figure 4: Dissimilar support provider with positive feedback

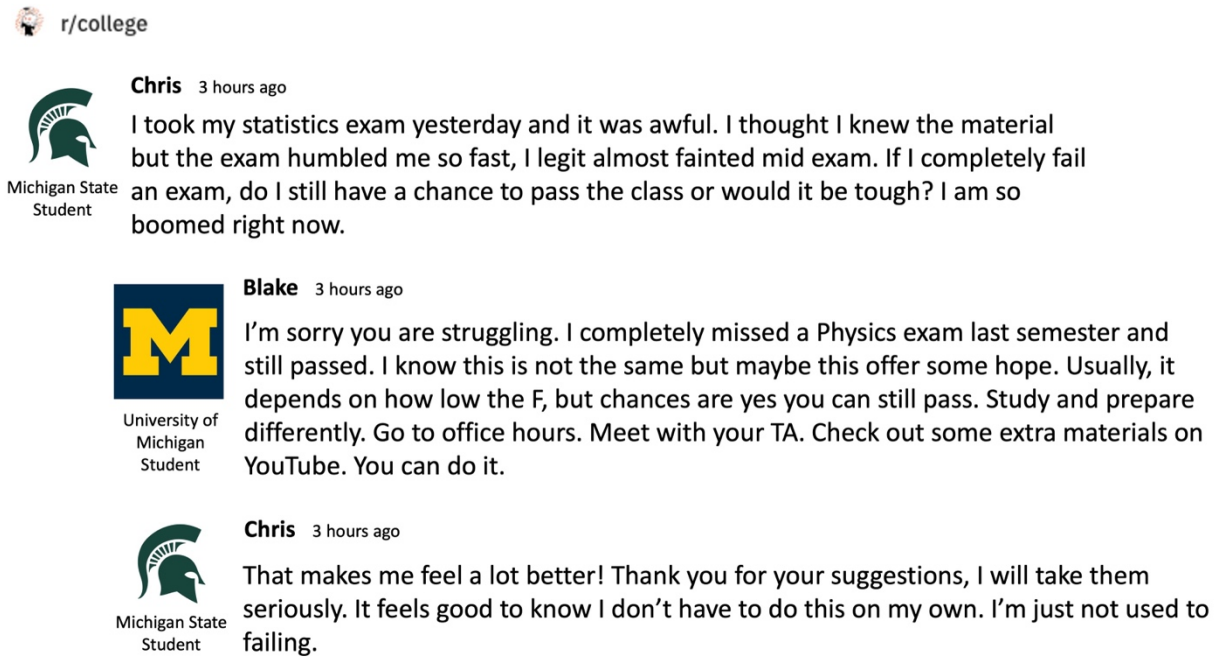
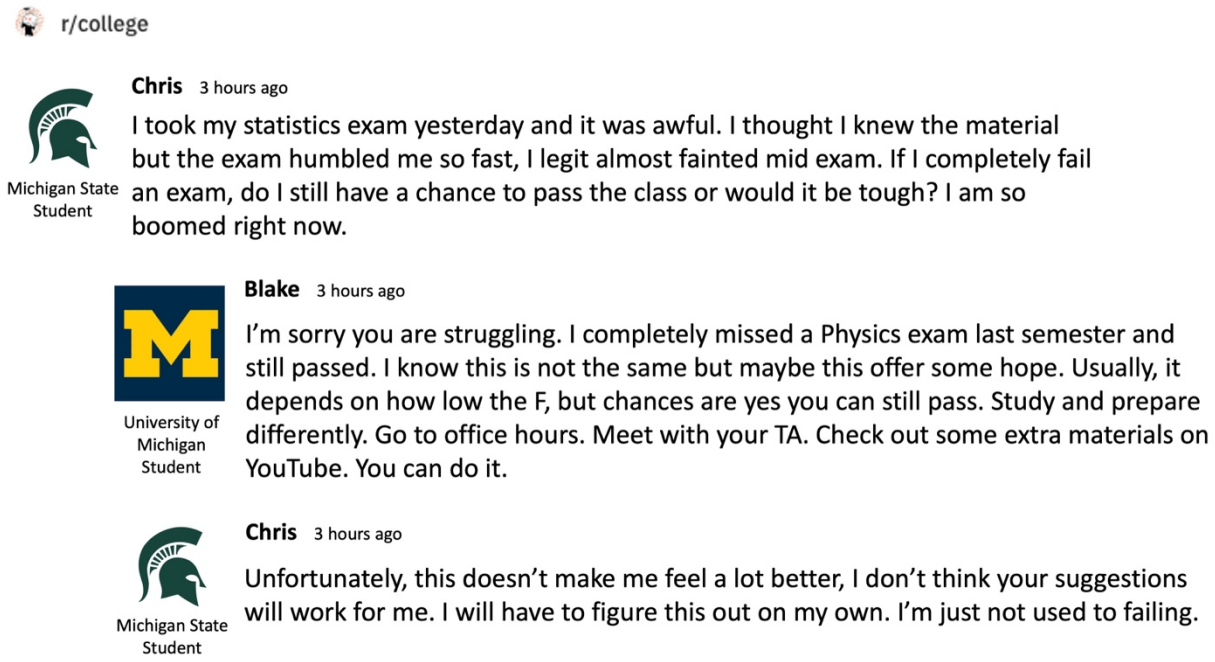


Figure 5: Dissimilar support provider with negative feedback



APPENDIX C: SCALES

Identification (Cameron, 2004)

(1 = strongly disagree; 7 = strongly agree)

I have a lot in common with Blake.

I feel strong ties to Blake.

I feel like I could form a bond with Blake.

I don't feel a sense of being 'connected' with Blake.

I feel a sense of closeness and emotional connection to Blake.

I feel like I will model my behavior after Blake.

I try to emulate Blake's behavior or style.

Similarity

(1 = strongly disagree; 7 = strongly agree)

Blake is like me.

Blake is similar to me.

Blake shares a lot in common with me.

I feel dissimilar from Blake.

I feel like Blake shares similar interests with me.

I could see myself in Blake.

Attitude toward providing social support (Burgoon et al., 1978; Shin et al., 2017)

"What is your attitude toward providing social support to others in an online community like this one?"

Unacceptable (1) – Acceptable (7)

Unfavorable (1) – Favorable (7)

Wrong (1) – Right (7)

Foolish (1) – Wise (7)

Bad (1) – Good (7)

Negative (1) – Positive (7)

Behavioral intention

(1 = strongly disagree; 7 = strongly agree)

In the future I would participate in an academic support community like this one.

In the future I would participate in an online community with similar topics.

In the future I intend to provide online academic support.

I will not be willing to provide online academic support in the future.

Manipulation check for the valence of feedback

(1 = strongly agree; 7 = strongly disagree)

The feedback from Chris is positive.

The feedback from Chris is favorable.

Chris approved the supporting message.

Chris agreed with the supporting message.

Chris liked the supporting message.