

Jose Fabian Elizondo-Gonzalez¹
Universidad de Costa Rica

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CREATING A VALIDITY ARGUMENT FOR THE “KU-SENSE OF BELONGING TEST” FOR EXCHANGE GRADUATE STUDENTS

Abstract: What kinds of validity evidence can the University of Kansas Sense of Belonging Test (KU-SBT) provide? Through the operationalization of a construct, this study intends to build an initial validity argument for the KU-SBT to determine exchange graduate students' manifestations of internal and external sense of belonging, which may play a role in their academic performance and motivation. While existing instruments have examined students' perceptions of social dynamics, the KU-SBT goes beyond by not only capturing students' perceptions but also assessing their tangible, performative behaviors in a more technologically-oriented educational era. To accomplish this objective, this paper addresses foundational elements essential for initiating a test validity argument. These include establishing a theoretical framework, developing a construct, formulating test interpretation claims, creating a table of specifications, and constructing a pool of items. To conclude, the author describes the future steps needed to ensure the robustness of the KU-SBT at the measurement level. These steps encompass piloting sessions, internal reliability tests, factor analyses, and other measures aimed at refining and strengthening the validity and reliability of the test.

Keywords: educational psychology, graduate students, multiculturalism, sense of belonging, validity argument.

Introduction

In the global context, international exchange² graduate students are confronted with a myriad of challenges when studying abroad (Baklashova & Kazakov, 2016; Gillen-O'Neel, 2021), and their sense of belonging³ might be one of them. Sebokova, Uhlarikova, and Halamova (2018) have found that “school belonging mediated the association between social and academic competence and students' concurrent optimism, connectedness and happiness” (Sebokova, Uhlarikova, & Halamova, 2018: 16). While Reschly, Huebner, Appleton, and Antaramian (2008) report that “frequent positive emotions during school were associated with higher levels of student engagement” (Reschly, Huebner, Appleton, & Antaramian, 2008: 419). Consequently, a high level of sense of belonging matters since it seems to enhance and predict how meaningful life can be (Lambert et al., 2013). However, as noted by Rajiman and Geffen (2018) “sense of belonging to the new society strongly affects immigrants' life satisfaction but not the other way around” (Rajiman & Geffen, 2018: 142). Hence, even though incoming exchange graduate students may have been motivated and satisfied with their lives before arriving to a new academic environment, not being able to develop a sense of belonging could have a detrimental effect on their own lives, academically and emotionally. Research in this specific educational realm and context is seminal to the field since “a number of researchers have predicted that ethnic-minority students would report lower school belonging than their ethnic-majority peers, perhaps because of negative academic stereotypes that ethnic-minority students often face” (Garcia-Reid, 2007; Goodenow, 1993; Ibanez et al.,

¹ josefabian.elizondo@ucr.ac.cr

² The term “exchange student” is understood as those students who only spend a semester or a year abroad. They must go back at the end of their term to complete their degree at their home universities.

³ Also referred to as school belonging or student engagement

2004, as cited in Neel & Fuligni, 2013: 681). Additionally, when considering the cultural indexes proposed by Hofstede (1991), some cultures are high power distance (power inequality seen as the norm) while others are low power distance (equal treatment is valued). On this subject, Cortina, Arel, and Smith-Darden (2017) expand on the issue by explaining that when asked about their sense of belonging “students living in cultures with high degree of power distance (particularly East Asian countries in these data sets) report lower school belongingness than students living in cultures with more lateral power relationships (Western countries)” (Cortina, Arel, & Smith-Darden, 2017: 1). Hence, not all exchange students will have a similar experience while studying abroad, even when campus authorities may regard them as a homogenous collective: exchange foreign students—without acknowledging the background and intersectional aspects of each culture and their perception in the new university. For this reason, university departments, centers, and organizations dedicated to student support, international student services, and student engagement can benefit from the results of research projects such as this one to better determine the degree of students’ sense of belonging across different moments of the semester, cultures, and academic programs. In turn, the results could also serve as another source of information to help determine the efficacy of universities’ strategies to foster students’ sense of belonging in their academic environments.

Theoretical framework

Stemming from Maslow’s hierarchical pyramid of needs, belonging was categorized as one of those human needs that would help people reach self-actualization (as cited in Dunleavy & Burke, 2019: 35). Regardless of anybody’s background or social class, “human beings are fundamentally and pervasively motivated by a need to belong, that is, by a strong desire to form and maintain enduring inter-personal attachments” (Baumeister & Leary, 1995: 522). Through the years, however, the concept of belonging has been reinterpreted and redefined in the educational field. For example, Rogers (1951) affirms that “academically, belonging is defined as a unique and subjective experience that relates to a yearning for a connection with others, the need for positive regard and the desire for interpersonal connection” (as cited in Allen, 2020: 2). Three decades later, Goodenow (1983) also proposed that school belonging is “the extent to which students feel personally accepted, respected, included and supported by others in the school social environment” (Goodenow, 1993: 80). More recently, sense of belonging at the higher education level has also been defined as “the extent to which students feel connected to their academic institutions and the people within those institutions” (Strayhorn, 2018, as cited in Gillen-O’Neel, 2021: 2). However, St-Amand, Bowen, and Lin (2017) have detailed a more comprehensive definition on school belonging:

School belonging is a complex and multidimensional concept that includes an emotional, social, participatory, and adaptive dimension. In this context, the sense of school belonging is achieved when students develop positive social relationships with members of the school environment; social relationships are characterized by encouragement, valorization, acceptance, support, respect, and friendship. Belonging also refers to positive emotions, which could be described as emotional attachments, more precisely to a feeling of intimacy, feeling part of a supportive environment, and a sense of pride in the school. The sense of belonging is characterized by active participation in school activities (e.g., extracurricular activities) and teacher-led activities in the classroom, as well as the adoption of norms, standards, and values conveyed within the socio-educational environment. This feeling refers to the harmonization of the needs and desires of the student to those of the members of the group, an element reflecting the positive adjustment to the school environment (loose translation). (St-Amand, Bowen, & Lin, 2017: 14)

In other words, to achieve a sense of belonging students are expected to “(1) feel a positive emotion towards school; (2) maintain positive social relationships with their peers and teachers; (3) perceive a synergy (harmonization) and a certain similarity with the members of the group; and (4) become actively involved in the school environment” (St-Amand et al., 2017, as cited in St-Amand, Smith, & Rasmay, 2022: 97). It is worth noticing that even though St-Amand et al. (2017) posit a more thorough definition of people’ sense of belonging in the education field, at its core, it still echoes the pioneering tenets

established by Maslow, Goodenow, and others. Finally, it is worth mentioning that current theories of belonging “posit that belonging also works dynamically — that changes in belonging state result in corresponding changes in students’ emotions, cognitions, and behaviors” (Baumeister & Leary, 1995, as cited in Gillen-O’Neel, 2021: 19). Hence, researchers have moved from considering sense of belonging a “student trait” to a “state”.

Literature review

Research has been conducted when it comes to sense of belonging, school belonging, or school engagement at the elementary and high school educational levels, but research into “belonging, a fundamental psychological need, is imperative in higher education to develop an understanding of how a sense of belonging may relate to students’ academic emotions, motivation, and student retention” (Pedler, Willis, & Nieuwoudt, 2022: 2). In the same fashion, Gillen-O’Neel (2021), Maunder (2018), Murphy and Zirkel (2015), Osterman (2000), and Slaten et al. (2016) have highlighted the importance of furthering this field of research, for studies at the university level seem to suggest that “higher education students who have a stronger sense of belonging tend to have more academic self-confidence, higher motivation, higher levels of academic engagement and higher achievement” (as cited in Pedler et al., 2022: 2). Similarly, Anderman (2002), Faircloth and Hamm (2005), and Murphy and Zirkel (2015) have shown that those “students who report the highest sense of belonging tend to be the same students who have the highest grade point averages (as cited in Gillen-O’Neel, 2021: 2). Hoffman, Richmond, Morrow, and Salomone (2002) also point out that “the perception that one is cared about contributed directly to interpersonal attachment, intimacy, and reassurance; all of these increased students’ comfort around both social and academic matters and enhanced their ability to cope with the demands of the transition” [to a new educational environment] (Hoffman, Richmond, Morrow, & Salomone, 2002: 252). The findings reported by Freeman, Anderman, and Jensen (2007) also suggest that a combination of both academic and interpersonal factors in students’ college experiences might promote the sense of belonging and, ultimately, their academic motivation in that setting (218). Even when students’ sense of belonging does not seem to be an academic skill taught at university courses or seminars, it appears to be a predictor— or at least a mediator—in students’ success.

Not developing this sense of belonging could have detrimental effects for students. Li, Lerner, and Lerner (2010) indicate that students’ academic success could be compromised if they cannot develop an emotional engagement since

youth who feel they belong to the school may be more likely to attend school, complete homework, and come to class prepared, which are all positively associated with improved academic outcomes. In other words, emotional school engagement leads to better academic attainment by its behavioral manifestation (Li, Lerner, & Lerner, 2010: 812).

This finding is also supported by Finn and Zimmer (2012) and Osterman (2000) who report that “students who do not develop or maintain a sense of belonging may disengage from their learning, which may reduce the likelihood of academic success and influence their decision to drop out of their studies” (as cited in Pedler et al., 2022: 2). Hence, “a well-developed sense of school belonging is usually associated with fewer behavioural and emotional problems, as well as greater pro-social skills” (Newman et al., 2007; Waters et al., 2010, as cited in Dunleavy & Burke, 2019: 35).

Since most studies rely on data from sense of belonging to a four-year university/program, little has been researched on the sense of belonging on exchange graduate students who will be introduced to a new university for one year or less. One study that approximates this specific circumstance is the one articulated by Gopalan and Brady (2020), where they report that “student belonging at 2-year colleges is lower than at 4-year colleges” (Gopalan & Brady, 2020: 136). To explain these results, they propose two main arguments. First, they consider that “students face greater structural challenges [and that] belonging both increases and is more associated with outcomes when structural barriers have been sufficiently addressed” (Gopalan & Brady, 2020: 136). The second argument is that due to students’ varied background, experiences, and goals “general institutional belonging in a course, major, or

profession” is less important (Gopalan & Brady, 2020: 137). Therefore, due to the scarce literature on such specific population, this scale development research project aims at contributing to the scholarly field of academic sense of belonging at the university level, considering the experiences of exchange graduate students only.

Research question

- What kinds of validity evidence can the KU-Sense of Belonging test (KU-SBT) provide?

Validity argument

The validity argument (foundational reasoning) for the KU-SBT is constructed using multiple kinds of validity evidence (elements that constitute the validity argument), which will include the following components: a definition of a construct, an interpretation of test scores, a table of specifications, a pool of items to be piloted, and a description of future steps and statistical procedures to gather more evidence on the validity and reliability of the test.

Construct: “Sense of belonging” is a state, not a student attribute, understood as both an internal and/or external manifestation of students’ level of identification with a specific university. An **internal manifestation** of sense of belonging implies feelings of pride, appreciation, and approval toward the achievements and endeavors of people in their university community (events, grants, sport teams, awards, volunteering programs). It also implies *feeling at one’s alma mater*. This internal manifestation of sense of belonging is a non-observable set of actions that only materializes in the mind of the student. On the other hand, an **external manifestation** of sense of belonging is present when students perform or act on the tacit behaviors mentioned above openly and non-coercively in a public or private manner, such as by following official university social media accounts, wearing apparel/wearables with the university logo, among others. This external manifestation of sense of belonging also typically manifests as a desire to engage with others in their academic communities, either virtually or in person. The external manifestation of sense of belonging is an observable set of actions that happens publicly and/or privately in the virtual and physical environments where students interact.

For the **KU-SBT**, the following elements determine its parameters:

Interpretation of test scores: the results from the KU-SBT will provide evidence for the following interpretations.

Claim 1: Students will be able to determine the extent to which their sense of belonging manifests both internally and externally. The results of the test do not determine whether or not a student can/cannot develop a deeper sense of belonging throughout their semester/year at KU as exchange students. The results only show students’ sense of identification at the time they take the test.

Claim 2: The Student Affairs Department, as well as the International Student Service Department at KU, will be able to make decisions about their strategies to foster a sense of belonging in this population. The results from the test should not be generalized for future exchange students. Instead, the results from the KU-SBT should be analyzed in conjunction with other measures across different semesters and samples to determine the efficacy of their strategies to develop a sense of belonging.

Claim 3: The results from the KU-SBT do not imply a correlation with other psychological tests that measure mental health disorders. Hence, a low score on the KU-SBT does not predict or entail mental-health related conditions such as anxiety or depression.

⁴ It is relevant to point out that these behaviors correspond to neurotypical students and who do not struggle with mental-health disorders, conditions which might affect the manifestation of students’ sense of belonging.

Test Specifications

This test

- a) Is designed around themes related to students’ lives within the academic community. Examples of these themes are university events, sport competitions, student/faculty awards, volunteering programs, among others.
- b) Consists of two sections. Each section consists of a 20-item scale with Likert items. The first section measures students’ level identification that manifests internally. The second one measures students’ level identification manifests externally. In total, the instrument contains 40 items assessed on two 5-point scales.
- c) Includes items that are written in the first person singular as to help students identify their behaviors more easily.
- d) Is administered through an online survey platform (Qualtrics), where students write their responses anonymously.
- e) Reports scores as very high/high/neutral/low/very low level of sense of belonging, with sub scores for the two sections. The categorizations will be provided based on these percentages.

Percentages	Ratings
90% or above	Very high
75%-90%	High
50%-75%	Neutral
25%-50%	Low
25% or below	Very low

f) Table of Specifications:

A	B	C	D	E
Survey Section	Objectives	Number of items	Type of item	Themes (per item)
Section A-SB manifested internally	To identify students’ internal reactions that may be conscious or unconscious toward their lives within their academic communities.	20	Likert-scale “Not at all true” to “Completely true”	#1, 10, 15, 18, 20 = internal feelings of pride #2, 3, 4, 5, 6, 7, 14, 19= feelings of pride towards people in their university community #8, 9, 11, 12, 13, 16, 17=feelings of alma matter
Section B-SB manifested externally	To identify students’ external reactions that may be conscious or unconscious toward their lives within their academic communities.	20	Likert-scale “Very unlikely” to “Very likely”	#22, 23, 24, 26, 27, 28, 31, 33, 36, 39= demonstrating feelings of pride towards people in their university community #21, 25, 29, 30, 32, 34, 35, 37, 38, 40= engage with others in their academic communities
	Total of items	40		

Pilot pool of items

The items correspond to the construct as seen on Column E of the Table of Specifications. To measure an internal manifestation of sense of belonging (Section A), five items were created to identify “internal feelings of pride”; eight items correspond to "feelings of pride towards people in their university community" and 7 more items relate to “finding one’s alma matter”. To determine the extent to which an external sense of belonging manifests (Section B), 10 items correspond to “demonstrating feelings of pride towards people in their university community” and 10 more items intend to identify students’ desire to “engage with others in their academic communities”.

Test Description⁵

Section A. Internal Manifestation of Sense of Belonging

How do these KU-related situations make you feel?

Using the scale below, indicate to what extent each of the following items presently corresponds to how these situations at KU make you feel.

Not at all true				Completely true
1	2	3	4	5

How do these KU-related situations make you feel?

	1	2	3	4	5
1. I am proud to study at KU.					
2. I feel happy for other KU students when they receive awards/grants.					
3. I feel proud whenever a KU sports team wins a match.					
4. I feel excited when KU student events are announced (trips, matches, contests, etc.).					
5. I feel honored to be taught by KU faculty.					
6. KU faculty inspire me to feel proud of KU.					
7. I feel happy for KU faculty when they receive awards/grants.					
8. When I walk into a KU classroom, it feels like home.					
9. I feel safe when I walk around the KU campus.					
10. I feel embarrassed to say that I study at KU.					
11. I wish I could stay longer at KU.					
12. Studying at KU feels like studying at a second alma mater (home university).					
13. I feel identified with KU.					
14. I feel sad whenever a KU sports team loses a match.					
15. I feel happy when I hear positive things about KU on the news/media.					
16. I feel more identified with my home university than with KU.					
17. KU feels like a place where I belong.					
18. I am glad I chose to come to KU.					
19. I feel sad when other KU students say they don't like KU.					
20. I regret coming to KU.					

Total sub score for Internal Sense of Belonging (ISB): ____ Rating for ISB: ____

Section B. External Manifestation of Sense of Belonging

How likely are you to perform these activities?

Using the scale below, indicate how likely you are to perform the activities described in each of the following items.

Very unlikely				Very likely
1	2	3	4	5

How likely are you to perform these activities?

	1	2	3	4	5
21. Attend activities organized by KU departments, centers, schools, etc.					
22. Like social media posts by KU official profiles.					
23. Like social media posts about KU posted by other KU students.					

⁵Instructions for survey takers: This scale assesses exchange graduate students' manifestation of sense of belonging at KU. The scale consists of two sections. The first section measures students' level of identification that manifests internally. The second one measures students' level of identification manifests externally. In total, the instrument contains 40 items assessed on two 5-point scales.

24. Share/repost/retweet social media posts by KU official profiles on my own social media.					
25. Attend activities organized by KU students.					
26. Wear merchandise (clothes, pins, lanyards, etc.) with the KU logo.					
27. Share/repost/retweet social media posts about KU by other KU students on my own social media.					
28. Upload stories, pictures, videos about life at KU on my own social media.					
29. Participate in sports-related events at KU.					
30. Participate in academic events at KU (conferences, symposiums, book presentations, etc.)					
31. Tell other students back home to come and study at KU.					
32. Participate in volunteering programs sponsored by KU.					
33. Decorate my room with KU flags, banners, colors, posters, etc.					
34. Follow KU official social media profiles.					
35. Include my KU education on my CV, resume, or LinkedIn profile.					
36. Continue wearing KU merchandise once I go back home.					
37. Socialize with other KU students outside of class time.					
38. Come back to KU to obtain a graduate degree/certificate.					
39. Get souvenirs with the KU logo/mascot as a present for people back home.					
40. Spend as much time on campus as possible to enjoy the KU experience.					

Total subscore for External Sense of Belonging (ESB): ____ Rating for ESB: ____
Total for KU-SBT: ____ Final Rating for KU-SBT: ____

Conclusions

With the purpose of constructing a sound test, it has been shown that the purpose and construct of this test have been defined based on the literature on sense of belonging in the educational realm through a reconceptualization of existing tests and studies. Also, there is evidence based on test content: a Table of Specifications defines one main domain with two subscales, themes related to college life, and there are items that operationalize the construct. What is more, a score interpretation is provided, and the claims specify the intended uses of the test, which directly respond to issues regarding consequences validity evidence.

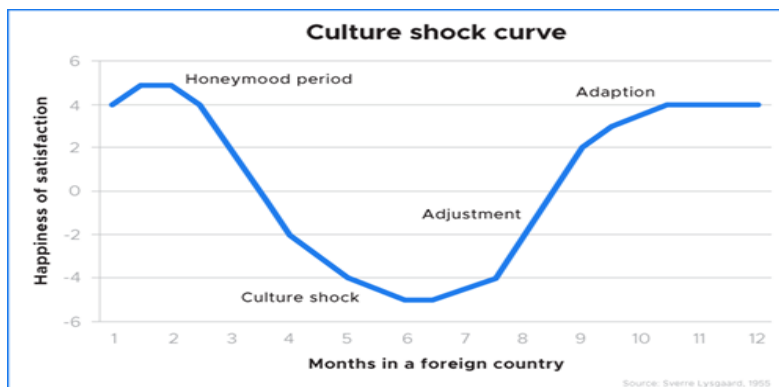
Future lines of work

The next stages to continue building a validity argument for the KU-SBT test would include at least three more procedures. First, an initial piloting of the items with the intended population will be conducted. The idea behind this stage is to determine the internal reliability of the items in the scales and the overall scores obtained, as well as to determine the fitting of the test model through a confirmatory factor analysis. The two-part test will be distributed to all exchange graduate students at KU through the Qualtrics platform, where responses will be anonymously retrieved once the Institutional Review Board approves of the project. The initial piloting will additionally include two more steps. To start, the researcher will lead a focus group with exchange graduate students for them to voice their opinion on the construction of the instrument. Then, he will request the expert opinion of different School Psychologists on the instrument as to determine its appropriateness and construct operationalization.

Second, to provide evidence of concurrent validity, exchange graduate students will also be asked to self-report their answers on two other previously validated instruments: the Psychological Sense of School Membership (Goodenow, 1993) and the Sense of Belonging Scale (OECD, 2017). Since the KU-SBT was modeled after these measures, it is expected to show concurrent validity evidence with these two tests.

Third, to account for students' U⁶ curve (see Figure 1) or W-curve⁷—which may impact student-related reliability—the pilot and official tests will be recommended to be administered at different moments of the semester/year. For those students staying for one academic year, the first administration can take place during the third month, where the *honeymoon* period has stopped being at its peak (on average), and the second administration can happen by the end of their tenth month, where the *adaptation* period typically develops. For those exchange students staying for one semester, the test can be administered during their third month and then during their fourth month, where the honeymoon period is coming to an end, but the culture shock (*frustration* stage) is not at its worst. The idea behind selecting these specific moments is to collect students' responses when they are the least affected by both internal and external factors caused by their culture shock U curve. Additionally, this test-retest method will then provide evidence of the consistency of the test.

Figure 1: Description of U curve



Note: Distribution of the culture shock curve by month. From: *Culture Shock Stages: Everything You Need to Know*, by L. McCluskey, 2020, <https://www.now-health.com/en/blog/culture-shock-stages/>. Copyright 2022 by Now Health International.

Lastly, once the researcher has gathered the input from these stages, a final version of the KU-SBT will be presented to authorities and stakeholders to use with the purpose of maintaining or continue improving their policies, strategies, and activities to promote exchange graduate students' sense of belonging at KU.

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⁶ Culture shock model proposed by Sverre Lysgaard (1955)

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Biographical notes:

Jose Fabian Elizondo Gonzalez is an EFL instructor and researcher who works at Universidad de Costa Rica. He holds two master's degrees, one in Education Administration and a second master's in Teaching English as a Foreign Language. Currently, he is finishing his second year as a PhD student in the Educational Psychology Department at the University of Kansas, USA.