

## Evaluating the Role of Face-to-Face Residencies in Cross-National, Accessible Cyberlearning

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### Abstract

*This paper provides an analysis of the role face-to-face residencies play in online, cross-national, graduate degree programs. In 2011, taking a cyberlearning approach, the IDPP developed the world's first fully online masters program in international and comparative disability policy, focused on students with disabilities in the ten countries of Southeast Asia. Using this online masters program as a case study, and incorporating pre-and post-residency survey data, the paper explores the impact of its face-to-face residency in building a sense of community, achieving learning outcomes, and highlight the role of culture and trust within the student cohort as a foundation for the online graduate learning experience. Finally, the paper discusses best practices in evaluating online graduate degree programs, emphasizing the importance of an evaluation committee and an iterative evaluation model. Using pioneering research on evaluating accessible cyberlearning, it identifies what works in such settings as well as identifying future research needs.*

### 1. Introduction

With increased media coverage of online learning and increased interest on the part of higher education locally and globally, there is a need for rigorous evaluation of online learning, especially those online programs that include students participating from multiple countries and cultures. Additionally, few studies provide in-depth empirical evaluation of graduate level online degree programs that involves students with a range of disabilities such as blindness, deafness, and mobility impairment.

This paper reports on the first phase of an ongoing major research project to design, implement and evaluate cross-national, accessible cyberlearning. It focuses particularly on evaluating one element of cyberlearning that prior research studies indicate contributes to a successful experience: the presence of an in-person component, or 'residency' as the first

aspect of the cyberlearning experience [36]. While not all cyberlearning environments allow for such a residency, this focus allows us to develop an approach to assessing the importance of the residency prior to the online learning experience. It also allows us to contribute to best practices for evaluating residencies for online learning environments, especially those involving multiple cultures and disability types.

### 2. Purpose

The purpose of this paper is to analyze the role face-to-face residencies play in online, cross-national, graduate degree programs using the Master of Arts in Comparative and International Disability Policy (CIDP) offered by the Institute on Disability and Public Policy (IDPP) at American University as a case study. In 2001, the IDPP for the ASEAN Region was formally established through major funding from The Nippon Foundation of Tokyo. Its main task is to partner with governments in the ASEAN region to foster public policies that promote persons with disabilities entering society to compete on a par with their non-disabled peers; and prepare leaders with disabilities in the field of public policy. The online CIDP masters degree program focused on the complex intersection of disability and public policy is the first of its kind in the world, and was approved by the Board of Trustees at American University in May 2011, with its first student cohort beginning in August 2011 [24].

The IDPP uses an iterative evaluation approach for accessible cyberlearning guided by a Cyberlearning Instructional Design, Development and Evaluation (CIDDE) committee to ensure that core competencies of the CIDP program are met. Based on recommendations in earlier research [16], the IDPP added a two-week residency to the otherwise entirely virtual degree program. This paper reviews the relevant literature, describes our conceptual framework, research questions, and methodology; and then presents our preliminary findings. We conclude with best practices and areas

for future research. Our goal is to provide a scalable framework for accessible cyberlearning programs around the world, especially those with a residency component.

### **3. Literature review**

#### **3.1. Cyberlearning**

The NSF Task Force on Cyberlearning defines the phenomenon as, “learning that is mediated by networked computing and communications technologies” [33]. With a literal reading of this basic definition, distance learning, online learning and eLearning may all be used interchangeably with cyberlearning. However, the IDPP takes a more comprehensive approach, suggesting:

Cyberlearning offers new learning and educational approaches via networked computing and communication technologies, and the possibility of redistributing learning experiences over time and space. Our scope incorporates the entire range of learning experiences over the course of a lifetime—not only formal education, not only in classes, but throughout the waking hours [5].

For online learning communities to reach this potential, it must be regarded as an inclusive knowledge management system where knowledge is available for critique, refinement and negotiation in a collaborative framework [48].

#### **3.2. Accessible cyberlearning**

Accessibility is often referred to when speaking of physical environments, but in online learning environments must also consider the physical and electronic environment of all participants [11][31]. To properly address the teaching and learning needs of students, instructors, and staff, the IDPP developed an accessible cyberlearning environment. Best practices were established to ensure the use of asynchronous tools (i.e. Learning Management System) and synchronous tools (i.e. Virtual Classroom) and would contribute to producing leaders in disability public policy [44].

In designing this cyberlearning environment the digital divide plaguing ASEAN and most developing countries had to be considered [19]; [21]; [28]; [43]; [49]. To accommodate varying Internet bandwidth a blended approach to content delivery was adopted, which included both synchronous and/or asynchronous options [6]; [8]; [14]; [29]; [41]; [42]; [44]; [45]; [46]; [48].

Essential elements of creating an accessible cyberlearning environment included the adoption of Universal Design for Learning (UDL) principles. Developed at the Center for Applied Special Technology (CAST), UDL is described as a flexible approach to curriculum design that offers ALL learners full and equal opportunities to learn [13]; [12]; [15].

The primary principles of UDL are as follows: provide multiple means of representation, provide multiple means of action and expression and provide multiple means of engagement [12]. According to Coombs, cyberlearning, “by its basic nature, limits the availability of some of the learning modalities discussed by CAST” [18] but these initial limitations are no longer insurmountable barriers [5].

#### **3.3. Instructional design and development**

To guide decision-making about the most appropriate instructional design approach to use for the program, the IDPP collected benchmark data on the top programs in public policy and disability studies in the United States and around the world. It used a modified Delphi-process and a global panel of experts to help design the curriculum, blended instructional design approach and cyberinfrastructure to support the target audience [16], [17].

#### **3.4. Residencies for online programs**

While there is not a large literature focusing on rigorous evaluation of residency components of online learning programs, work dating back to 2003 [36] recommends an initial face-to-face learning component to online learning experiences. A 2012 twelve-year review of best practices, using a case study of an online graduate program at a small, urban university [22] highlights models where there are residency requirements at orientation, midterm in a program, and at the end of the program. However, much of this work is descriptive of what is occurring rather than rigorously analytic or evaluative.

#### **3.5. Culture, community, and trust in online learning**

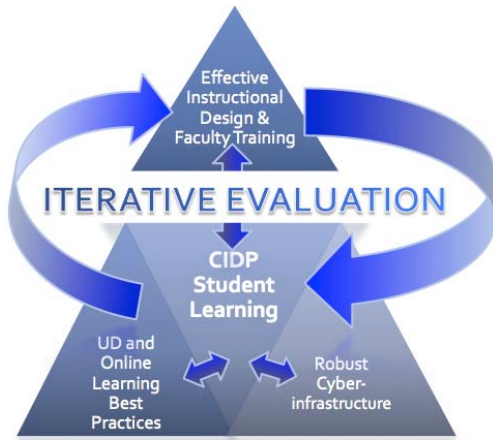
Other work examines the roles of culture in online learning [38]. Focusing directly on online learning and culture, Kersten and O’Brien (2011) underline the roles of culture and the impact of cross-cultural communication in their study, using surveys as their methodology [25]. Ocker and Hiltz (2012) focus on team functioning and demonstrate how

essential the establishment of a shared identity is, especially in the case of partially distributed teams [34]. They also highlight the vital role of trust.

A 2012 article by R.S. Austin and W.J. Hunter in talks about an on-line seminar that brought together culturally diverse students from northern and southern Ireland. They found that "the relative success of our online seminars may be due in part to the team-building face-to-face activities early in the course." (p.462). Face-to-face opportunities may contribute to building a sense of community [20].

### 3.6. Iterative evaluation

The approach to evaluation reported here is iterative, shown in Figure 1, and complements the program's iterative approach to instructional design.



**Figure 1: Iterative evaluation model**

It takes into consideration the effectiveness of instructional design, faculty training, best practices, as well as cyberinfrastructure and its effects on students' perception of accessibility. It includes both online and residency components and is both formative and summative in nature.

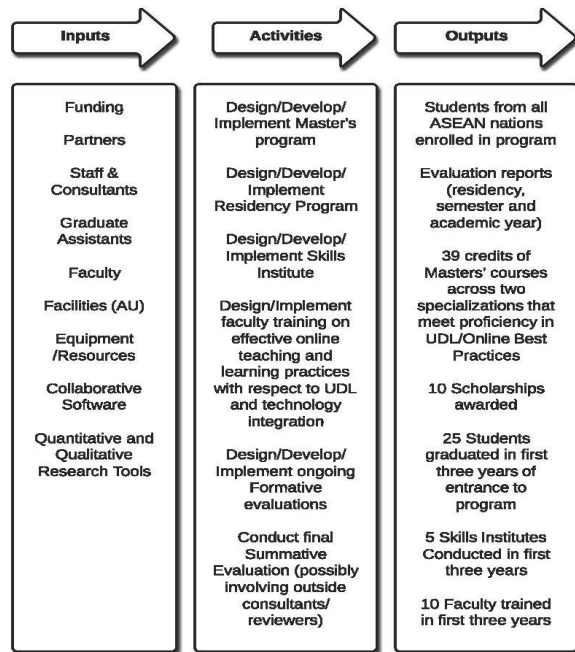
## 4. Conceptual framework for measures

The conceptual foundation for several instruments used in the evaluation were based on Self-Determination Theory (SDT), one of the most prominent and widely tested theories of human motivation in the world. "Self-determination is a concept reflecting the belief that all individuals have the right to direct their own lives" [10]. It has been used as the theoretical foundation in hundreds of studies in both educational and clinical research. What makes the theory particularly appropriate to the evaluation of the CIDP residency is that it has also

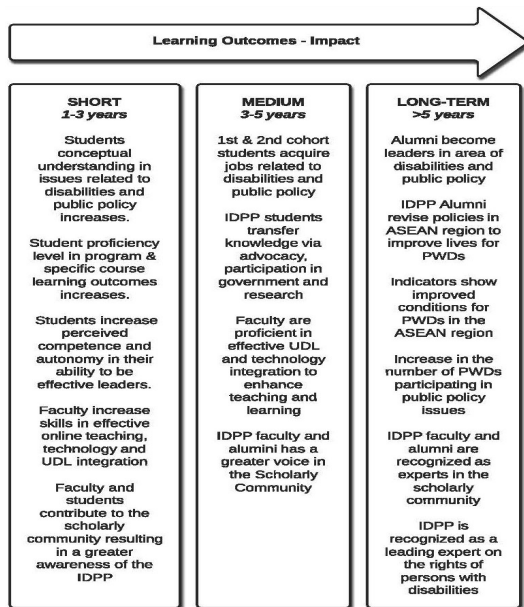
been applied in different cultural contexts [14]; [26]; [30] with persons with physical and psychiatric disabilities, and in connection with self-advocacy. For example, a study of wheelchair basketball players with and without physical disabilities supported the validity of SDT concepts and that they applied as well to the athletes with physical disabilities in the study [35]. A recent study highlights the role of motivation in general in online learning and uses an experimental framework for evaluation [26].

Self-determination encompasses "concepts such as free will, civil and human rights, freedom of choice, independence, personal agency, self-direction, and individual responsibility" [47]. In some cultures where persons with disabilities may be considered inferior, or expected to "accept what has been decided for them by others" [27], self-determination will play a major role in future change [32]; [39]. Measures used in the evaluation using SDT as a framework included *Needs Met During Residency*, *Sense of Community*, *Perceived Competence in Learning*, and the *Learning Climate Questionnaire*.

To establish a solid evaluation foundation it was essential that IDPP establish a Cyberlearning Instructional Design, Development & Evaluation (CIDDE) Committee to support the CIDP program. The CIDDE promptly created a logic model for the initiative illustrated by Figures 2 and 3.



**Figure 2: Logic model-inputs, activities and outputs**



**Figure 3: Logic model outcomes: short, medium, and long-term**

The purpose of a logic model is to provide stakeholders with a road map describing the sequence related events connecting the need for the planned program with the program's desired results. The logic model created for the CIDP serves as the foundational element of the iterative evaluation strategy and this study, and helps internal and external evaluators track overall program progress.

As part of the curriculum, CIDP students meet physically prior to starting the program. This phase of the program is called the residency. During the residency, students, IDPP staff, and CIDP faculty spend two-weeks in the ASEAN region at a regional university learning about the CIDP program, orienting themselves to the university setting and graduate studies, participating in faculty chats (in person and online) and engaging in a comprehensive group policy project. This two-week residency for the CIDP program represents an additional financial investment for the program. This paper investigates the role of the residency and its importance to the program.

## 5. Research questions

Our overarching research question for this paper asks: "Does the CIDP residency contribute to students' perceived knowledge gains as well as to their perceptions of competence, autonomy, and relatedness?" Based on our prior research and literature review, we ask the following questions:

- 1) In the timeframe of a residency experience prior to online learning, will students feel they have made gains in knowledge of public policy and other factors that relate to the disabilities field?
- 2) What factors of a residency experience contribute to students' feelings of trust, competence, autonomy, and sense of community, and which factors detract from such feelings?

## 6. Methodology

To ensure the residency not only was academically sound but also addressed the needs of the students, the evaluation committee developed a pre and post-residency survey.

### 6.1. Participants

A total of 10 students with disabilities were accepted into the masters program in year 1 (Cohort 1) and 12 students were conditionally accepted in year 2 (Cohort 2). Seven participants from Cohort 1 volunteered to take the pre-residency questionnaire. Nine participants in Cohort 1, and 7 participants in Cohort 2 took the post residency questionnaire. There were 6 males (M) and 4 females (F) in year 1 and 9 males and 3 females in year 2. The majority of students were from the ASEAN region but a few were from other countries as shown in Table 1 below.

**Table 1. Countries of origin for participants**

Country of Origin	No. Students Cohort 1	No. Students Cohort 2
Philippines	6 (3 M, 3 F)	
Vietnam	2 (1 M, 1 F)	1 (F)
Singapore	1 (M)	2 (1 M, 1 F)
Cambodia	1 (M)	1 (M)
Indonesia		3 (M)
Malaysia		1 (F)
USA (Born in Sri Lanka)		1 M)
USA (born in Mexico)		1 (M)
Nigeria		1 (M)
Ghana		1 (M)
TOTAL	10	12

### 6.2. Instruments

The pre-residency questionnaire was designed to garner a baseline account of students' perceptions of their knowledge about topics planned for presentation and discussion during the residency. Measurement

development was informed by input from the evaluation committee, IDPP team, and through accessibility testing. Based on the evaluation, the presentation format of instrument items was modified to increase accessibility. The pre-residency questionnaire also collected data on participant's communications and social media habits.

The post-residency questionnaire collected student perceptions of gains in knowledge and skills as a result of the residency experience. It also garnered information that would impact student motivation and student trust such as 1) Needs met during residency 2) Sense of Community 3) Perceived Competence 4) Learning Climate, and 5) Expectations. The factors related to motivation used measures from the family of SDT instruments and have high reliability and construct validity. For example, the Learning Climate Questionnaire measures a single underlying construct (perceived autonomy support) and has achieved alpha's as high as .94 in numerous studies [50]; [9]; [2]. The 4-item Perceived Competence Scale has high face validity and has been used to predict effective performance and learning outcomes. This brief measure has excellent internal consistency ranging from .80 to .94 in studies [50]; [3].

### 6.3. Data collection and analysis

The confidential pre-residency survey was distributed via the web to students three weeks prior to the students attending the first residency. Students were allotted one week to complete the survey. This allowed the evaluation committee a few days to analyze the data and provide the IDPP staff with key information that could be used to revise and/or enhance the program to better address the needs of the incoming students.

The post-residency data was acquired a week after the students left Bangkok and a final report was drafted to be used as input data for the following year's residency. While interview data was added to the evaluation in Year 2, we do not include it here, as we have no comparative data for Year 1. Institutional Review Board (IRB) approval was acquired at American University for the evaluation.

Descriptive statistics were used to summarize this small dataset. Qualitative responses were also helpful in interpreting some of the results.

## 7. Findings

Outcome-Based Evaluation (OBE) is a systematic way to determine if a program has met its

goals. While it is most often applied to long-term projects, this approach was also useful for measuring the impact of the residency. The approach requires identifying the inputs (e.g., funding, staff, faculty, equipment, etc.), outputs (e.g., products or services), activities and desired outcomes with indicators (of success) prior to program implementation.

While *outputs* refer to the accomplishments of a program, *outcomes* refer to changes that occur in persons or policies as a result of a program's activities. Such changes could relate to knowledge, skills, attitudes, or behaviors. The outputs for the CIDP residency included 2 weeks of orientation activities and sessions, 10 participants completing the residency, and numerous recognitions in the form of media coverage generated as a result of the residency.

The three targeted participant outcomes with indicators related to: a) learning from training and orientation, b) perceptions of disability affordances, and 3) affective and motivational goals. Additionally, the evaluation team was interested in collecting formative feedback on the preliminary development of the IDPP online portal. The planned outcomes and summary indicators are presented below and were supported by the data.

**Outcome1:** *Participants will demonstrate increased learning in specific training areas as a result of participation in the CIDP Residency.*

**Indicators:** Success on this outcome would be represented by 60% or greater of participants indicating average or above in their perception of skills / preparation in specific areas.

**Outcome2:** *Participants will report that the training and other affordances provided throughout the residency met their individual needs with respect to disabilities and cultural diversity among others.*

**Indicators:** Success on this outcome would be demonstrated if more than 60% of residency participants indicated favorable ratings (Agree or Strongly agree) for specific affordances.

**Outcome3:** *Participants believe that their residency experience contributed to increased self-perceptions and motivational factors necessary for success in the program and future leadership roles.*

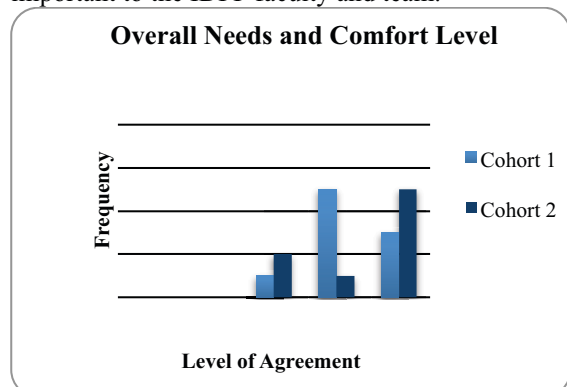
**Indicators:** Success across a number of factors was targeted at 75% of participants agreeing or strongly agreeing with statements provided that related to perceptions of competence, community, and learning climate.

### 7.1. Needs met during residency

This 10-item section asked students to consider the degree to which a number of needs were met during the residency ranging from their perceptions

of the willingness of the IDPP team to help when needed, accessibility needs, personal relaxation needs, organization of the residency and so on. This section used a 5-point Likert scale ranging from *Strongly disagree* to *Strongly agree* with *Neutral* as the mid-point.

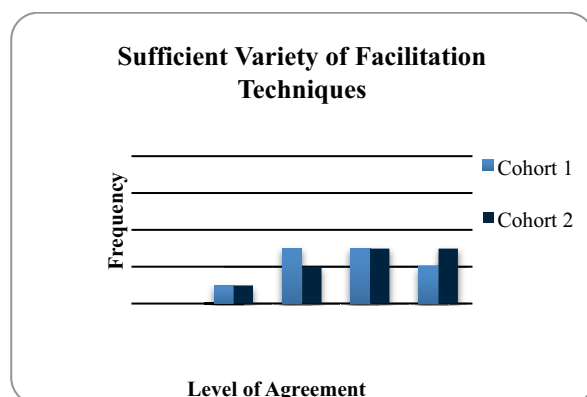
The outcome-based goal that greater than 60% of students would agree that their needs were met was achieved. In fact, as can be seen in Figure 1., 8 of 9 students agreed or strongly agreed, “my individual needs and comfort level during the residency were important to the IDPP faculty and team.”



**Figure 4: Overall needs and comfort level**

The following items ranged from 3.3 to 3.8. Items that scored less than 3.8 also include a bar chart.

- The faculty incorporated principles of learning that helped me perform effectively during the residency. (M = 3.8, N = 9 and M=3.9, N=8, respectively)
- I felt the faculty used a sufficient variety of facilitation techniques (e.g., lecture, small group work, interactive technologies, etc.) for my learning needs and preferences. (M = 3.7, N = 9 and M=3.9, N=9, respectively)

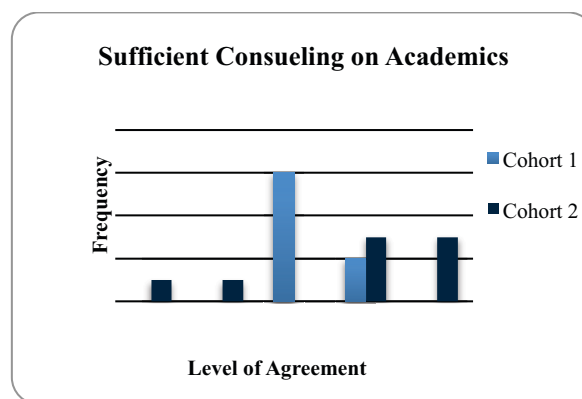


**Figure 5: Faculty Facilitation Techniques**

An area that may need more focused attention is

individual counseling to students about courses they will be required to take. Figure 6 shows that most students were neutral in their perception that counseling they received during the residency was helpful. It may also be that not all students received such counseling and that is what is reflected in the scores.

- My academic counselor was helpful to me during our meeting about courses I will take. (M = 3.3, N = 8 and M=3.8, N=8, respectively)



**Figure 6: AU academic counseling**

## 7.2. Knowledge and skills

Students were asked to respond to perceptions of knowledge and skills based on a 7-point Likert scale with 1 representing *very low* and 7 representing *very high* in terms of knowledge with *average* as the mid-point. A 7-point Likert scale was chosen in order to have a better chance of sensing a change between the pre and post knowledge and skills assessment. A total of 14 items were included.

**Table 2. Cohort Means Pre/Post Residency**

	Cohort 1		Cohort 2	
	Pre	Post	Pre	Post
Preparation for success in the CIDP	4.9	5.0	3.5	4.9
Assistive tech that I can use for myself and/or others	4.3	3.9	4.3	5.4
Public policy issues that relate to PWDs in the ASEAN region	4.4	5.4	3.5	4.9
Techniques/strategies promoting PWD policies in ASEAN	5.0	5.0	3.7	5.3
Issues that relate to perceptions of PWDs in the ASEAN region	4.4	5.2	3.5	4.9

As Table 2 shows, the largest gains (1 full point or greater) from pre to post-residency scores were in the areas of techniques for problem-solving, cross cultural communication and presentation skills for advocating public policy.

The outcome-based goal *Participants will demonstrate increased learning in specific training areas as a result of participation in the IDPP Summer Residency* was achieved as greater than 60% of students rated their learning as average or above.

### 7.3. Building a sense of community

Having a sense of belonging contributes to an individual's need for relatedness or social connectivity and overall trust. A scale comprised of six items using a 5-point Likert Scale ranging from *Strongly agree* to *Strongly disagree* measured students' sense of community at this very early point in their graduate experience in the program.

All item summary scores for community building ranged within the "Agree" category with half the items scoring 4.6 indicating a fairly strong perception of community building through this experience. During the residency, I felt I had many opportunities for face-to-face interaction with other program participants. (M = 4.6, N = 9 and M=3.8, N=8, respectively).

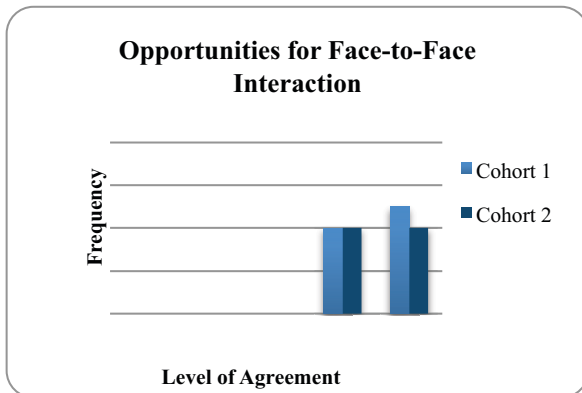


Figure 7: F2F interaction

### 7.4. Perceived competence

Perceived Competence in students' ability to be successful in the program was measured by using a highly reliable instrument used in many self-determination studies. This brief 4-item instrument used a 7-point Likert scale ranging from *not at all true* to *very true*. All items load on the same factor thus summarizing the scores for all items provides an overall index of perceived competence, which were 6.0. This indicates that students perceive that they

have the necessary ability to be successful in the program. A bar chart is provided for the first item.

I feel confident in my ability to learn the material in this master's degree program. (M = 6.1, N = 9 and M = 6.1, N = 8, respectively).

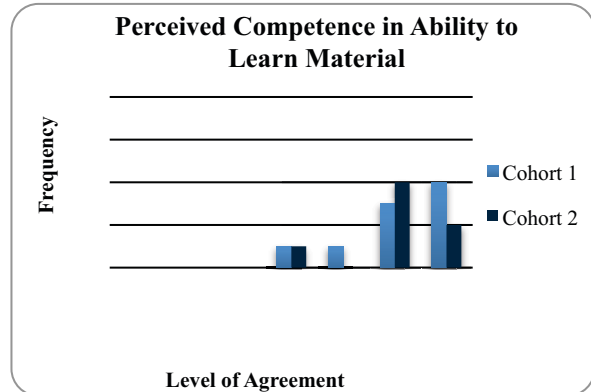


Figure 8: Perceived Competence in Learning

### 7.5. Expectations, personal goals and values

To explore where students placed the highest personal value in terms of the residency outcomes, they were asked "Which outcome statements of the IDPP residency are true for you?" A summary of the possible selections is below:

- I increased my knowledge PWD public policy.
- I feel more a sense of community with IDPP.
- I have increased my confidence for becoming a leader in this field.
- I have a better understanding of the CIDP.
- All of the above
- None of the above

Students could select as many responses as appropriate. Two thirds (n = 6) of respondents indicated that "All of the above" were true for them. No one selected "None of the above."

Figure 9: Attainment of Personal Goals

## 8. Discussion and Recommendations

The purpose of this paper was to analyze the role of residencies in a cross cultural online graduate program to determine whether students perceived they had made knowledge gains as a result of the residency and equally as important to determine the motivational impact of a face-to-face residency on perceived competence, autonomy, and developing community. The results of the outcome-based evaluation of the residency over two years suggest that residencies are important in both respects.

Several recommendations based on data are discussed below.

1. *Incorporate meaningful opportunities for community building and social networking.*

All students who participated in the post residency survey agreed or strongly agreed that the residency provided many opportunities for face-to-face interaction. It is essential to continue this community building during the *online* program. Online social interactions create a true sense of community and “relatedness,” and opportunities to initiate change using cyberbased opportunities will be integral to the curriculum. This finding supports a study involving individuals with disabilities in China that found providing greater opportunities to engage in online activities with others generated higher social capital [23]. Social capital is defined as “trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions” [23].

Participants appreciated the recreational activities provided during the residency. Perhaps, such “recreational” activities could be created online. This may enhance the experience of CIDP students and address recent finding that gaps in social inclusion and involvement in extra-curricular activities still exist for PWDs in institutions of higher learning [37]. This finding is similar to studies of crossnational and crosscultural online learning that highlight the need to establish trust early [16].

2. *Provide as much support for autonomy as is practically possible.*

Autonomy support is an area that will require careful consideration. While results of the Learning Climate Questionnaire indicated that students found the faculty encouraging and supportive, some felt choices and options were limited. Having choices is critical to autonomy. Another factor with potential to undermine an individual’s sense of autonomy are barriers to successful participation. One participant became frustrated with technical difficulties. In addition to using Self-Determination Theory to explain the reaction, it could also be described in terms of the perceived *social barriers* to success. The social barriers notion can be used to explore the relationships between technologies and persons with disabilities [40]. “e-democracy and e-government are seen as ways to bring previously marginalized groups, such as people with disabilities, into the policy process” [40], the technologies themselves (including their level of accessibility) can either obstruct or serve PWDs who aim to attain their goals (need for competence), participate effectively and fully in social networks (need for relatedness), and make independent decisions (need for autonomy).

3. *Provide a variety of instructional techniques and*

*approaches in the coursework.*

Residencies provide the ideal opportunity for students to practice working through real-life situations involving policy change and advocacy. When designing residency experiences, faculty must facilitate small successes to encourage students’ perceived competence for future leadership. As in the residency, online environmental supports that help develop and sustain relationships between students, faculty, and staff will be critically important to the success of the program.

## 8.1 Limitations

The short length of time the CIDP has been in operation and the small sample size were limitations. Future research needs to focus in greater detail on the link between the residency and the online components and include interview data as well.

## 8.2. Best practices and future research

Three best practices have emerged as critical for the effective evaluation of the roles residencies in cross-national, accessible cyberlearning:

- formal evaluation committee;
- iterative adjustments to evaluation techniques;
- interdisciplinary research and conceptual framework combining findings from the fields of evaluation, psychology, and online learning.

The iterative evaluation approach provides many opportunities for future research. Future research needs to focus in greater detail on the link between the residency and the online components and include interview data as well as survey data. All iterations generate information to enhance the overall effectiveness and efficiency of an accessible cyberlearning community.

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