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Using the action research process to design entrepreneurship education at Cenderawasih University

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Abstract

In 2013, as part of US AID's Higher Education Leadership and Management initiative in Indonesia, Universitas Cenderawasih began an action research project to address the under-employment of UNCEN graduates through purposeful entrepreneurship education. Although entrepreneurship education had been introduced previously, it had not integrated theory and practice appropriate to Papua. Core principles of the action research process (ARP) were used to develop and implement a locally effective curriculum for students enrolled in UNCEN's Faculty of Economics. A central commitment underlying the project was to design a curriculum that could address social inequalities in Papua, specifically the significant under-representation of Papuan native peoples in the entrepreneurship sector. Through a mixed methods approach that used demographic, attitudinal and outcome data as well as observational, interview and focus group data, the ARP team designed an experientially-based learning module, documented implementation of the pilot learning module, evaluated its effectiveness, and developed proposals for improvement and institutionalization. Based on outcomes that showed persistent gender and ethnic differences, future iterations of UNCEN's entrepreneurship curriculum will adopt a culturally responsive pedagogy (Gay, 2010; Ladson-Billings, 1995) that addresses the disparities in cultural and social capital shown to be significant to entrepreneurship education.

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1. Introduction

Universitas Cenderawasih is charged in this era of Papua Special Autonomy to graduate students who are able to lead the region to sustainable economic and job growth through creative and responsible entrepreneurship. Yet, to date, students continue to aspire to the secure employment afforded by the civil service. Young Papuan graduates are most likely to queue for the chance to become civil servants despite increasingly limited jobs in this sector. To interrupt this aspiration pattern and encourage student entrepreneurship, UNCEN in collaboration with U.S. A.I.D.'s Higher Education Leadership and Management program in Indonesia (HELM) undertook an Action Research Project (ARP) that piloted an integrated, experientially-based curriculum in entrepreneurship, attentive to the cultural and social conditions significant to its Papuan students.

2. Core principles of the Action Research Process used at UNCEN

Action research engages people in a systematic, data-driven research process targeted to solve local problems. Key principles are that the purpose of the research is for action on a specific local issue, and that the issue is best addressed if those engaged in the applied research process are the people who will be affected by the action's implementation, outcomes and subsequent revision. The process is a consensus-building, circular one beginning with identification of the issue and people, followed by research to determine action, implementation of action, and then evaluation and revision of the action (McNiff, 2013; McNiff and Whitehead, 2001; McTaggart, 1991). This data-informed cycle constitutes the ARP practices of inquiry, intervention, development and change with communities and institutions. Through its collaborative process, action research can lead to self-transformation and consensus on the change undertaken.

The US AID Indonesia Higher Education Leadership and Management (HELM) initiative funded twenty-five higher education institutions to undertake an 18-month ARP pilot project. The overall goal was to demonstrate the potential of ARP for innovative change management and leadership development within the Indonesian higher education context (Lomax, 1991; Zuber-Skerritt, 1992). UNCEN's project to address the under-employment of UNCEN graduates intended on one level to increase students' understandings and skills in entrepreneurship, and hence over time to contribute to economic diversification in the region. Within the goal to orient UNCEN students to careers outside the civil service, the team also sought to address social inequalities in Papua, specifically the significant under-representation of Papuan native peoples in the entrepreneurship sector of the economy. On another level, they modelled an ARP approach to curriculum development as a way of introducing institutional change management from the middle, in contrast to the more common top-down practices of change extant at the university. Following completion of one academic cycle, outcomes and processes would be evaluated and shared with academic leadership from across the university, with the intention of scaling up to the full Faculty of Economics and potentially to Faculties across Universitas Cenderawasih.

2.1. Project Design

In its strategic plan, UNCEN had determined that entrepreneurship should be a compulsory subject across the curriculum. However, to date, fewer than one third of students had any formal instruction in entrepreneurship, limited to conceptual introductions. The ARP team of four Economics lecturers identified one core subject in which to integrate a semester-long experiential entrepreneurship unit within an existing theoretical entrepreneurship course. Within this unit, students worked in groups to create small start-up businesses (Burchell, 2000; Kemmis and McTaggart, 1988). Following development of a business plan, the groups received start-up funds (intended as a

loan) from the university to initiate their businesses. They had responsibility for all aspects of the business, including submission of regular financial accounts and activity reports. Students had field trips to successful local businesses and seminars from local entrepreneurs, as well as training in various aspects of starting a small business.

All 89 students in Semester III of study, Department of Economics chose to participate, forming nine groups of 9-11 students per group. Students completed pre- and post-surveys about their attitudes toward and experiences with entrepreneurship as well as participated in focus group discussions about their experiences with the piloted curriculum. In addition, the ARP co-researchers observed the student business groups in action, with attention to the dynamics of participation, negotiation and leadership. The researchers also tracked the students' success at generating income from their businesses.

Underlying the project's design was the belief that entrepreneurship is not innate to people but rather is learned. Students develop certain orientations toward entrepreneurship from their families and communities; structured training and guided experience as part of the formal curriculum can enhance or change those orientations but must also factor in the cultural values and practices already significant to the students (Wlodkowski and Ginsberg, 1995). The ARP students represented diverse prior experiences with entrepreneurship based in part on whether they came from urban or rural areas and whether they were Papuan or non-Papuan in heritage. The ARP team determined to assign students as heterogeneous groups – of mixed gender, language, and culture (race); the research design attended to potential issues introduced by student diversity.

The data analyses identified and monitored students' orientations about entrepreneurship, analyzed factors that influence the entrepreneurship culture for students, and tracked student experiences with entrepreneurship within the piloted unit. Student demographic and academic data included gender, family employment background, ethnicity, place of origin, socio-economic status, and GPA at UNCEN. Students responded to a pre- and post-course survey of factors important to an entrepreneurship mindset (Sukardi, Imam, Santoso, 1991). The ARP team collected financial data from the student groups to track gross and net income generated by their businesses. Confirmatory factor and frequency analyses were used to determine factors that influence the development of entrepreneurship mindsets for pilot project students.

Qualitative data included observations of the student interactions within work groups. Focus group discussions about learning experiences with the business start-ups were conducted with a purposive sample of students that included the elected leadership of each business group. Administrative consultations included the Provost, Vice Provosts, and Deans.

3. Findings

The data analysis from 89 student participants, including the pre- and post- paired questionnaires (final n=43 completed pairs), showed changes in students' mindset following participation in the entrepreneurship curriculum. While most students entered the course with some desire for entrepreneurship, they lacked confidence to try, had limited if any experience with business practices, and lacked start up capital. Few had any intention to enter business careers.

Nine groups developed plans for small businesses, mostly in the service sector (selling telephone credits, snacks or drinks, and organizing travel). At the end of eight months, of these group businesses, three generated enough income to repay their start up loans and continue to grow their enterprises; four groups continued their businesses but made too little profit to repay their loans; and two were not profitable and did not continue. Analysis of qualitative and quantitative data on the nine groups shows correlation between their degree of success (measured by profitability and duration of the business) and the gender, tribe (ethnicity), GPA, family socio-economic status, and group work style of the students. The quantitative results were triangulated with data from in-depth interviews and focus group discussions (FGDs) on group process and business practices. In brief, Papuan students, males, and students with GPAs below 3.0 were less likely to succeed with the start-up businesses than non-Papuans, females, and students with GPAs above 3.0. While gains were noted in both individuals' reported confidence to engage in

entrepreneurship and in their reported ability to seek information to support business initiatives, the degree of these improvements followed the same differentiated pattern as did business success.

3.1 Students' Mindset about Entrepreneurship

The forty-three (43) respondents who completed pre- and post-questionnaires comprised 23 male and 20 female students. Twenty-six (26) identify as Papuans and 17 as non Papuans, many from other islands of the Indonesian archipeligo. Students designated their parents' employment as: 18 farmers, 16 civil servants and 9 self-employed. On a 4.0 GPA scale, sixteen students had an earned GPA above 3.0, sixteen had a GPA between 2.51 to 3.00, ten between GPA 1.51-2.50 and one student had a GPA below 1.50.

Students reported a willingness to try entrepreneurship as early as possible. As illustrated in Figure 1 below, their desire to become an entrepreneur increased as a result of the curriculum.

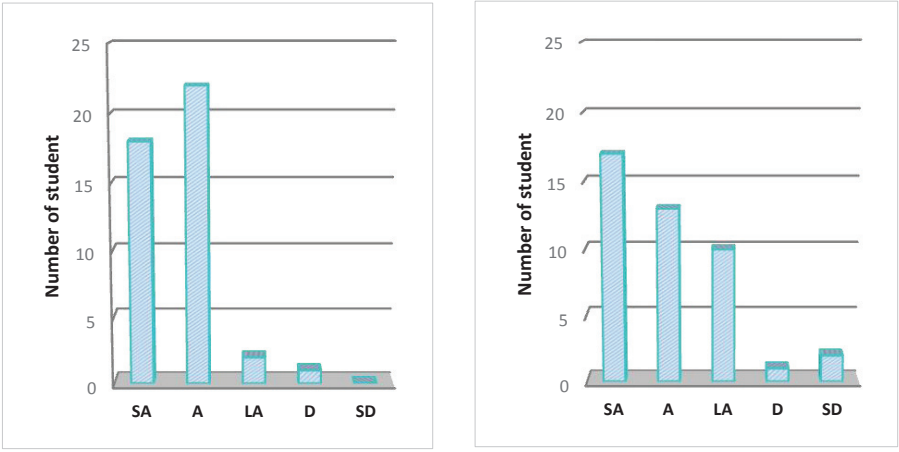

Figure 1: Drive to become an entrepreneur following graduation: pre- and post-curriculum

Whereas thirty (30) of the 43 students agreed or strongly agreed with an intention to try entrepreneurship following graduation, after participating in the entrepreneurship curriculum, the number who agreed or strongly agreed increased to forty (40) students of the 43, largely a shift from those who had been unsure into a willingness to try. From the focus group data, students made clear that they imagined trying to start small businesses at the same time that they potentially held other employment. They were wary of generating adequate income from their own eventual small business ventures to meet family expectations for a university graduate.

Similarly, students showed a willingness to reconsider their intention to become civil servants following graduation, as illustrated in Figure 2. Whereas 29 students indicated on the pre-course survey that they aimed to become civil servants following graduation and ten were not certain, following the course, the responses shifted from a preponderance in the strongly agree category to a majority in the uncertain category. This was confirmed in the focus groups and interviews, in which students explained that direct experience with successful entrepreneurs and with starting small businesses had increased their interest in career paths other than the civil service.

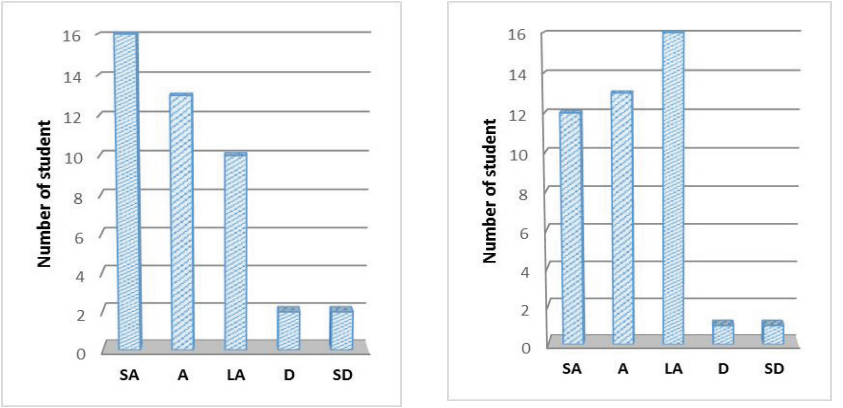

Figure 2: Intention to work as a civil servant following graduation, pre- and post-curriculum

The pre- and post-survey asked a total of 104 attitudinal statements, with eight designated to address each of thirteen factors predicted to be latent variables. Respondents used a 5-point response scale, ranging from 1 indicating low/bad/never to 5 indicating high/good/always. Confirmatory factor analysis (Thompson, 2004) of student responses on the pre-test confirmed the thirteen latent factors to be statistically significant in shaping students' entrepreneurial spirit. These included: initiative, seeing opportunities, perseverance, searching for information, focus on work performance, commitment to the job, efficiency orientation, strategic planning, problem solving, self-confidence, persuasive ability, leadership strategies, and firmness. Loading factors obtained from these thirteen factors show self-confidence to be the most dominant factor in shaping factors of the entrepreneurial spirit, and "searching for information" the weakest factor in shaping entrepreneurial spirit.

The trend in changes from the pre- and post-survey responses, across the thirteen factors identified as significant to shaping the entrepreneurial mindset of the pilot study students, are shown in Figure 3 below. The scale follows the 5-point scale of the survey, with analysis completed by quartile (Cooper & Schindler, 2006). Of the factors, self-confidence proved the most dominant factor and one that most differentially increased following the course.

Significant changes occurred in factors: looking for information, focus on work, commitment to the performance, efficiency orientation, strategic planning, problem solving and confidence, leading strategy and firmness but the most dominant factor is self-confidence. Students indicate they are more likely to have started looking for information for businesses activities, they are focused, committed to the work and efficiency-oriented. They also plan strategically the business activity, are quicker in solving the problems that occur and above all, have more confidence to engage entrepreneurship. Of the 13 factors examined, four did not significantly change in the mindset of the students: initiative, take advantage of opportunities, perseverance and persuasive skills.

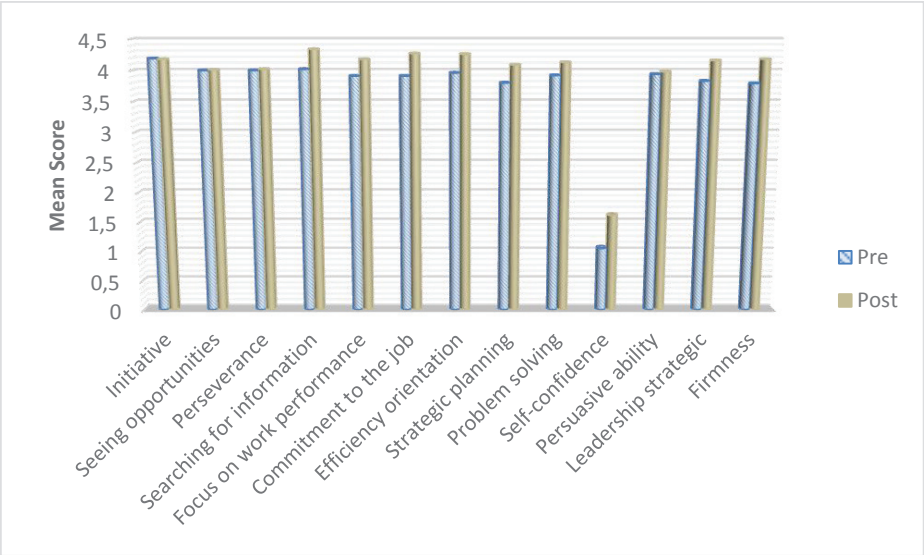

Figure 3. Factors that shape students' entrepreneurial spirit

A more detailed analysis of the data by demographic data shows small distinctions by gender, ethnicity (tribe) and academic achievement (GPA) in the self-reported patterns of mindset changes. For example, in contrast to male students, female students showed greater willingness to take advantage of opportunities and to use their skills but at the same time indicated a drop in their self-confidence as entrepreneurs. All other categories of students indicated improved confidence to engage entrepreneurship. Native Papuan students were the only category of student to show a decrease in their sense of persuasive ability. Students with low GPAs (below 1.5 on a 4 point scale) showed drops in their sense of initiative, seeing opportunities, perseverance, efficiency-orientation, planning, problem-solving and firmness.

3.2 Student business groups

Three types of student groups were identified according to their business success: successful, moderately successful and unsuccessful. The following Table 1 shows the composition of the groups and factors important in their relative success with their start-up businesses.

Table 1: Factors in student entrepreneurship work groups' business success

Indicators	Highly Successful	Moderately Successful	Unsuccessful
Gender	More women	Equal # men and women	More men
Members of the Group	9	9	9-11
Tribes	Non Papuan	Non Papuan/ Papuan	Non Papuan/Papuan
GPA	3	2.50-3	2.50-3
Parents' Work	Civil Servants & Self-Employee	Civil Servants	Civil Servants
Team Leader	Female	Female	Male
Team Work	Full Team work	Less Team Work	No Team Work
Business Location	More than one place	University campus	University campus

Of the three groups that succeeded to repay the loan, female students outnumberd the men and women chaired all three groups. These groups comprised more non-Papuan students in number than Papuan students. The number of non-Papuans are 20 students, consisting of Batak, Toraja, Makassar and Ambon, while that of Papua only 7 students from Biak, Serui and Jayapura. The number of students based on GPA (grade point average) show that 15 students with GPA above 3.01, 10 students from 2.51 to 3.00 and 2 students from 2.00 to 2.50. The students based on parents' work show 23 students with parents in the civil service and 4 students with self-employed parents; these groups are weighted toward middle class families. From the direct observation, these highly successful groups show full team work where trading activities are done in more than one place.

Four groups ran businesses but were not able to repay the loan. These four groups comprise equal numbers of Papuan and non-Papuan students, were balanced among men and women but were led by women; all trading activities were done in the university only. The majority of the students in this category have parents working as civil servants. The observation data indicated that these four groups used less teamwork. Two groups failed in their business attempts and did not attempt to try again. Observations showed that these two groups comprised more male students, were led by males, and used no teamwork.

An analysis of entrepreneurial mindset by group business success did not show consistent patterns of difference across the groups, with one exception. The three (3) most financially successful groups as an aggregate showed much stronger gains than the other groups in searching for information to grow their businesses.

4. Conclusion

Gender, cultural and social capital differences contribute to students' mindsets about engaging in entrepreneurial activity and particularly to their inclination to work together as a team across dimensions of difference. While the factors of entrepreneurial spirit showed similar patterns across gender, ethnicity, and family economic status, the

observational and interview data indicated that these factors significantly do influence how the students interact with one another in their business start-up groups. The research team posits that women are more inclined to work cooperatively with one another and to accept leadership directives, while men and Papuan students are less so. Family social class experiences also contribute to comfort with engaging entrepreneurship. The self-reported gains in factors that contribute to an entrepreneurial spirit did not guarantee students' success in working together to initiate businesses.

Future iterations of the entrepreneurship curriculum should adopt a culturally responsive pedagogy (Gay, 2010; Ladson-Billings, 1995) that addresses the disparities in gender, cultural and social capital shown to be significant in entrepreneurship education. The curriculum should take into account ethnic origin, language, blood ties, and regional origins among groups and mentors (Curwin and Lynda, 2003). It also needs to address differences in family experiences with employment and engagement in diverse settings. Such responsiveness to student experience and culture should contribute to the creation of more success with entrepreneurship within and across groups. Finally, changes in the mindset of the students is a known to be a very long process, requiring seriousness and patience from the learners, and wide participation and mentoring on the part of the university lecturers.

From a change management perspective, the Action Research Project has succeeded in securing UNCEN leadership commitment to sustain the curriculum initiative into a 2016 project. Entrepreneurship will become a compulsory teaching subject at the university, with the ARP team guiding others in development of an integrated theory and practice curriculum.

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