The Prevalence of Holland Theory and Self-Directed Search in the Hawaii Education System

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**One Career Assessment for All:**

*A Critique of the Prevalence of Self-Directed Search in the Hawai‘i Public Education System*

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Abstract: Education leaders in Hawai‘i strive to create career pathways for students beginning as early as middle school and continuing through college. One of the most recognizable tools used to assist students in this decision-making process is the Self-Directed Search, often referred to as the RIASEC. The present article describes the Self-Directed Search and the development of the Hawai‘i career pathways, ending with a discussion about the application of RIASEC results in a community college system in Hawai‘i. The critique highlights the potential for over reliance on a single tool to help students make a complex decision affecting college choice, majors, and careers.

Keywords: Hawai‘i, high school, education, career, Self-Directed Search, RIASEC, counseling, advising, guided pathways, community college
One Career Assessment for All: A Critique of the Prevalence of Self-Directed Search in Hawai‘i Public Education

A student sits down for her first appointment at the Kapi‘olani Community College Employment Prep Center and sighs, “I need to change my major, but I don’t know to what!” She goes on to explain that all signs had pointed her to a career in medicine. In high school, she joined the health sciences academy, and participated in the school’s HOSA – Future Health Professionals organization. She entered both the regional science fair and the HOSA annual competition, receiving awards in both. The student was doing well at Kapi‘olani Community College – after just a semester, she was tapped to participate on a biology professor’s project as a student researcher. She had worked through about half of her associate degree in natural sciences when she realized that she had no “passion” for the subject. In fact, she was exploring theatre acting as a hobby, and seriously considering becoming a teacher; career areas more typically associated with arts and social sciences. After following the academic pathway that she seemed most aligned with, she now felt stuck.

Career Readiness in Hawai‘i Public Education

By completing a rigorous high school curriculum and entering college, this student would be considered a success. Like many school districts in the continental US, the Hawai‘i Department of Education (DOE) strives for all of its high school graduates to enter into post-secondary education and/or careers (High School Graduation Requirements and Commencement, 2016). Over the last decade, preparing students for not only college but also for careers has gained traction throughout the U.S. education system, supported by the almost nationwide adoption of the Common Core Standards in public education (“About the Standards,” 2017). To meet the demand for an educated, skilled work force, “standards were created to ensure that all
students graduate from high school with the skills and knowledge necessary to succeed in college, career, and life” (“About the Standards,” 2017). Through partnerships and teacher training via the C2C, or Connect to Careers initiative, Hawai‘i public school students should enter college academically prepared; have “career understanding; and, employability skills” (“Hawai‘i DOE | Connect to Careers,” 2014).

Public higher education in Hawai‘i promotes similar goals through the strategic plan for all 10 campuses in the University of Hawai‘i system (“Strategic Directions: 2015-2021,” 2015). College faculty, staff, and administrators have aligned curriculum and co-curricular activities to learning outcomes that include a measure of career preparedness, while educators at all levels are responsible to identify, assess, and improve upon their practices through a self-evaluation process required for accreditation (WASC & DOE, 2017). The Hawai‘i Graduation Initiative focuses on the on-time graduation of college students with a special emphasis on Native Hawai‘ian, and/or low-income, and/or first generation college students, and transfer rates of all students that are under-represented at the baccalaureate level (“Strategic Directions: 2015-2021,” 2015). For students to be successful, community colleges have developed academic pathways to degrees that will eventually be aligned with the pathways at the high school level (Center, 2017). To be efficient, practitioners at both the high school and college level require a simple, time-sensitive and inexpensive tool to assist every student in determining their career interest, the first of many steps in the academic pathway.

Although Frank Parsons is credited with the development of vocational counseling and guidance (Jones, 1994), John L. Holland is best known for developing the Self-Directed Search (SDS), one of the most-used tools in career counseling (Gottfredson & Johnstun, 2009; Nauta, 2010). Holland and colleagues also revised and created additional assessments not covered in
this critique, such as the Career Attitudes and Strategies Inventory, Strong Vocational Interest Blank and the Environmental Assessment Technique (Nauta, 2010; Spokane, 1985).

Although Holland’s (1959) seminal work on vocational choice originated as a person-environment theory, a theory used by vocational counselors and social workers to help find a client’s best fit, Holland’s model is often referred to in student development (Patton, Renn, Guido, & Quaye, 2016). A major assumption of the model is that an individual’s personality is influenced by the interaction of heredity with cultural and personal forces, for example, social class, the physical environment, and significant others including family and peers. Holland contends that an individual seeks settings that compliment his or her “preferred methods for dealing with environmental tasks” in a hierarchy according to preference (1959, p. 35). The settings Holland describes as “occupational environments” (1959, p. 35) were built from existing theory about the types of workers in six major occupational classes.

Holland (1959) substantiated the self-evaluation construct as an effective means to determine vocational choice. Holland refined his original theory in later work (Gottfredson & Holland, 1990; Gottfredson, Jones, & Holland, 1993; Holland, 1974, 1985, 1996), renaming a few of the original six environmental typology, adding personal typology, and identifying secondary assumptions.

Perhaps the strongest feature of Holland’s work is his continuous evaluation, integration and reframing of new information, including real-time career information, used to develop a variety of instruments for assessing individuals and environments (Nauta, 2010). Holland intended these instruments to be used in the United States to assist in the career-decision making process (Holland, 1996). A commonly used instrument in high school and higher education career offices is known as the Self-Directed Search, or SDS (Gottfredson & Johnstun, 2009),
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which was developed over a 25-year period through the empirical study of individuals working in specific careers categorized by Holland types. The SDS is used to determine an individual’s personal typology, typically the first three letters in hierarchical order according to the individual’s preferences, although 720 personality pattern subtypes are possible. A misnomer, but popular name for the SDS is the acronym for the typologies: RIASEC. The acronym stands for Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (See Table 1).

Table 1

A Brief Description of the Personality Typology

<table>
<thead>
<tr>
<th>Personality Type</th>
<th>Preferences for activities and occupations</th>
<th>Sees self as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>Manipulation of machines, tools, and things</td>
<td>Practical, conservative, and having manual and mechanical skills – lacking social skills</td>
</tr>
<tr>
<td>Investigative</td>
<td>Exploration, understanding and prediction or control of natural and social phenomena</td>
<td>Analytical, intelligent, skeptical, and having academic talent – lacking interpersonal skills</td>
</tr>
<tr>
<td>Artistic</td>
<td>Literary, musical, or artistic activities</td>
<td>Open to experience, innovative, intellectual – lacking clerical or office skills</td>
</tr>
<tr>
<td>Social</td>
<td>Helping, teaching, treating, counseling, or serving others through personal interaction</td>
<td>Empathic, patient, and having interpersonal skills – lacking mechanical ability</td>
</tr>
<tr>
<td>Enterprising</td>
<td>Persuading, manipulating, or directing others</td>
<td>Having sales and persuasive ability – lacking scientific ability</td>
</tr>
<tr>
<td>Conventional</td>
<td>Establishing or maintaining orderly routines, application of standards</td>
<td>Having technical skills in business or production – lacking artistic competencies</td>
</tr>
</tbody>
</table>

Secondary assumptions were important additions to the Holland Theory. The model itself includes a picture of each personality or environment typology as one side of a hexagon, in
the order: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C), with C situated next to R (Nauta, 2010). The order of type on the hexagon demonstrates relatedness; that is, closer types are more related than those diametrically opposed on the hexagon (See Figure 1). This degree of relatedness is known as consistency (Holland, 1985; Kieffer, Schinka, & Curtiss, 2004).

Figure 1
Holland Hexagon

Holland also defines two characteristics in relation to type: differentiation and identity. Differentiation identifies the strength of the personality type as a characteristic of both the individual and of the work environment. A person who is highly differentiated to one personality type strongly prefers activities most related to that type; whereas a highly differentiated environment highly represents the characteristics most related to that type.
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(Holland, 1985, 1996). Similarly, identity can be ascribed to a person or an environment. Identity refers to how clearly and stable a person’s goals, interests, and abilities are over time. Environmental identity is the degree to which goals, tasks, and rewards in the setting are stable over time (Holland, 1985, 1996).

Finally, the concept of congruence is the degree to which a person and environment match. The theory is that an individual that works in an environment highly congruent to their personal typology will experience higher levels of job satisfaction and stability (Gottfredson & Holland, 1990; Holland, 1985, 1996).

Holland worked with colleagues to develop materials characterizing work environments by the RIASEC typology, originally using the Dictionary of Occupational Titles, developed by the U.S. Employment and Training Administration (Holland, Gottfredson, & Baker, 1990; Nauta, 2010). Through this work, Holland addressed potential barriers to the development and implementation of the career database (Osipow, 1990), influencing the classification of all jobs coded in the Occupational Information Network (O*NET) developed by the U.S. Department of Labor, Employment & Training Administration. O*NET provides jobseekers with access to the SDS along with interpretations of the results from the brief, online assessment (“O*NET Resource Center,” 2017). With the official adoption of the RIASEC typology in O*NET all federal and state workforce offices, high school and college career counselors, and the general public have free online access to the SDS.

**Theoretical Gaps**

Not all careers fit into Holland’s assumption of consistency; there are a variety of career type patterns that appear to be inconsistent on the RIASEC hexagon (Holland, 1985). According to the theory, the distance from one type to the next determines the relatability of the types;
therefore, Artistic and Social types are more closely related than Artistic and Realistic. Holland began developing his theory and related assessments in 1959, and completed his latest work with colleagues in the late 1990s, prior to the proliferation of personal computing, the internet and web-based economies. The rise of new media and technology has created a number of jobs and career paths that are not easily defined into career types. As an example, the top three career types for the job “graphic designer,” including the percent of occupational interest matching career type are: Artistic (100%), Enterprising (56%), and Realistic (56%). This career did not exist when the SDS was created; therefore, these career types would be presented as less related, although within the graphic designer field, they are highly related.

Most studies validating the Holland Theory look at the relationship between the personal and environmental typology, or congruence, in relation to job stability, satisfaction, and career identity (Gottfredson & Holland, 1990; Holland, 1985, 1996). These empirical studies have shown the RIASEC typology to be correlated with future career choice, and high congruence to be associated with job satisfaction. There have been some mixed results in relation to congruence (Arnold, 2004; Holland et al., 1990), especially in studies where jobs do not precisely fit the participant’s personal typology, emphasizing the need for assessments that measure other personality factors, such as attitude, ambition, persistence, and resilience. Osipow (1990) contrasted Holland Theory with other career theories in psychology including social learning, developmental, and work adjustment theories, noting that other models filled in the gaps in career development theory not addressed by Holland. Examples include career decision points and post-job-entry traits such as productivity, coping strategies, work stress, skill atrophy and development, throughout an individual’s life stages and transitions (Osipow, 1990).
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Holland’s own work revealed an interesting variable that was more highly associated with job satisfaction than congruence: the expectation of job satisfaction (Gottfredson & Holland, 1990). An individual’s belief in his or her ability to succeed in specific situations or accomplish a task is known as self-efficacy (Bandura, 1986). Eccles and colleagues (2009; Eccles et al., 1983) investigated the effect of self-efficacy on career choice. Similar to the Holland theoretical model, Eccles’ research (2009; Eccles et al., 1983) found that individuals’ interpretations of their experiences during tasks, activities, and behavioral choices were influenced by their individual and collective identities. In the Expectancy Value Model of Motivated Behavioral Choice, these interpretations lead to an individual’s belief or beliefs about their ability to complete tasks, which then affects their career choices related to those tasks (Eccles, 2009; Eccles et al., 1983). Eccles also describes a gendered pattern to career choices that was replicated in other studies over different time periods (Eccles, 1994, 2009, 2011).

A gendered effect was also discovered with the SDS (Passler & Hell, 2012; Proyer & Häusler, 2007), where statistically significant numbers of men identified with the Realistic type and women identified with the Social type. Although not necessarily a flaw in Holland’s theoretical model, these outcomes demonstrate the effect of the sociocultural environment on career decision-making. This becomes a critical consideration for educators encouraging student career development. In addition to maintaining an awareness of potential gender bias in the results of the SDS, a few practical concerns for educators are noteworthy, especially in the state of Hawai‘i.

Practical Concerns

Holland and colleagues conducted their research to develop US-specific career typologies that would be generalizable to the American public. Osipow (1990, p. 129) identifies Holland’s
approach as useful in assisting “people who wish to make a crude choice of field” by matching
the individual personality type with the work environment. The Hawai‘i Department of
Education and the University of Hawai‘i at Mānoa Career & Technical Education Center are
collaborating with the Hawai‘i P-20 Partnerships for Education group, a state-directed office
whose primary goal is to increase the percentage of adults in Hawai‘i with a college degree to
55% by the year 2025 (“Hawai‘i P-20 Partnerships for Education,” 2013). The three groups are
working to develop career pathways based on O*NET career clusters (“O*NET Resource
Center,” 2017). These clusters are mapped to the Holland career typology, which may be
connected to either an academy within the high school, or a career track. Table 2 compares the
current Hawai‘i Career Pathways and descriptions to the Holland type (“Hawai‘i Career and
Technical Education,” 2015). Additional work has begun through Hawai‘i P-20 and the
University of Hawai‘i Community College (UHCC) system to align these career clusters to
UHCC Career & Technical Education (CTE) majors and careers. One such effort, dubbed the
“6-16 Initiative,” promotes career guidance planning for students from the sixth grade through

Table 2
Hawai‘i Career Pathways Compared to Holland Personality Type

<table>
<thead>
<tr>
<th>Hawai‘i Career Pathway</th>
<th>Hawai‘i Career Pathway Descriptions (from <a href="https://www.Hawai%E2%80%98i.edu/cte/pathways.html">https://www.Hawai‘i.edu/cte/pathways.html</a>)</th>
<th>Holland Personality Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Resources</td>
<td>Occupations that cultivate, use, analyze, manage, and sustain natural resources</td>
<td>Realistic</td>
</tr>
<tr>
<td>Health Services</td>
<td>Diagnostic and clinical health work, biotechnology medical research, and health and nutrition services</td>
<td>Investigative</td>
</tr>
<tr>
<td>Arts &amp; Communication</td>
<td>Focuses on connecting formal structures of artistic expression to audience perspectives in careers spanning</td>
<td>Artistic</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Public &amp; Human Resources</th>
<th>Business</th>
<th>Industrial &amp; Engineering Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a knack for working with people? Enjoy collaboration and teamwork? Culinary and hotel operations, education, legal and protective services, social sciences, and human services</td>
<td>The diversity of skills and concepts such as technology, finance, customer service, marketing, organizational behavior, and management</td>
<td>Solve problems, connect people and places, and make the world run</td>
</tr>
</tbody>
</table>

At the community college level, a tool purchased by the majority of campuses called Focus2Careers, or Focus2, begins with the Self-Directed Search. College students may complete the interest survey to assist students in their major choice and academic planning. For example, at Kapi‘olani Community College, first-time college students complete Focus2 as part of their new student orientation and are asked to refer to their Focus2 results during in-person group course registration.

An over-reliance on Holland Theory and the Self-Directed Search tool within the Hawai‘i Department of Education and the University of Hawai‘i Community College (UHCC) system may lead to misinformation at best, and improper college and career planning at worst. Advisors that use the SDS without accompanying information, such as on the O*NET site, are not adequately servicing their students. Indeed, on the myfutureHawaii.org site, online tools available to students in Hawai‘i are represented as “Career Assessment Skills and Interest Tests” (Graduation Alliance, Inc., 2019), but are no more than a simple RIASEC assessment with little guidance for the online user related to the career typology (University of Hawai‘i Community Colleges, 2012).
A practical concern related to this generalized approach is the sheer number of career descriptions identified with a single Holland type. A student who takes the Hawai‘i CTE assessment may identify with the Realistic career type, but have no interest in Natural Resources.

The interpretation of the three-letter hierarchical code presents similar challenges. As an example, a Realistic-Conventional-Investigative (RCI) code identifies two substantially different jobs: web developer and forest and conservation worker. Finally, the job results from the Self-Directed-Search are based on continental U.S. careers with large numbers of workers. These results may exclude region-specific careers and any specialized job with smaller numbers of workers. For example, a Native Hawaiian cultural practitioner may find both a college degree and a satisfying career in a highly specialized area that is not represented anywhere in the SDS results. Similarly, the Self-Directed-Search is not as adept at identifying gigs, or secondary jobs, that might provide a person with not only supplemental income, but also job satisfaction. The over-generalizability of the SDS might lead practitioners to misinterpret the results of a RIASEC assessment and miss the opportunity to assist a student in finding his or her best career fit.

Finally, the Self-Directed-Search was created in the context of an industrial society that values individualism. This tool might be less applicable to individuals in a collectivist society, such as Native Hawaiians. As an example, a student’s career choice may be more appropriately aligned with the student’s values, such as earning enough to support a family, or having the flexibility to connect with and care for family members, than with the student’s interests. To facilitate the best career fit, practitioners must take into consideration the student’s work styles and values in addition to the student’s interest in the work activities and skills required for the position.
Educators must also challenge students to go beyond the results of the simple assessment by helping students understand the developmental, work adjustment, and social learning that might also influence the student’s self-efficacy and career decision making process. Some of this information might best be gathered from work-based opportunities, such as service learning, where the student may participate in an activity and reflect on their own career development. Although this approach may slow the process of declaring a major, allowing a student to explore career options using both online tools and the student’s own experiential learning may help the student to pursue the career that will provide the most career success and satisfaction.

High school and college counselors play an important role in shaping the career decisions of the individual students in their care. The over-reliance on one tool, the Self-Directed Search, could limit the students’ career options. Rather than adjusting students’ career pathways to match the results of the SDS, counselors can adapt the results to their students by helping students interpret the findings, reflect on the alignment to the students’ work style and values, and identify their willingness to commit to the education and training required for their career options. Through the careful application of the RIASEC results and with consideration of their own needs, students will be able to make well-informed decisions as they navigate through their career journey.
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